

FURNACES,
FLATTING MILLS, SWAGERS,
BLOWPIPES, BURNERS,
Soldering Appliances, Tools, Tooth Brushes,
Dentifrices, Books,
AND SUNDRIES.

CLAUDIUS ASH, SONS & Co., Ltd.,

5 to 12, BROAD STREET, GOLDEN SQUARE,

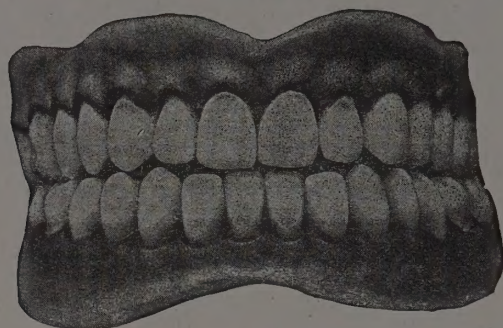
LONDON, W.

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ASH'S MINERAL TEETH.



PRICES ON APPLICATION.

Universally esteemed for their Natural Form,
Variety of Shape, Adaptability, Superb Texture,
and Great Strength.

Made in FLAT, VULCANITE, DIATORIC, TUBE, TUBE CROWNS, etc.

SEND FOR TEETH CATALOGUE.

Do not accept any Pin Teeth as of Ash's Manufacture which are
not mounted on Wax bearing our Monogram.

HAY'S KRESOL.

A HIGH-CLASS ANTISEPTIC AND DISINFECTANT.

Does not corrode Steel or other Dental Instruments.

	s.	d.		s.	d.
Small Bottle	0	7½	1-pint Tin	1	3
Large „	1	0	½-gallon Tin	3	6
¼-pint Tin.	0	9	1 „ „	6	0

CLAUDIUS ASH, SONS & CO., Limited,

5 to 12. Broad Street, Golden Square, London, W.

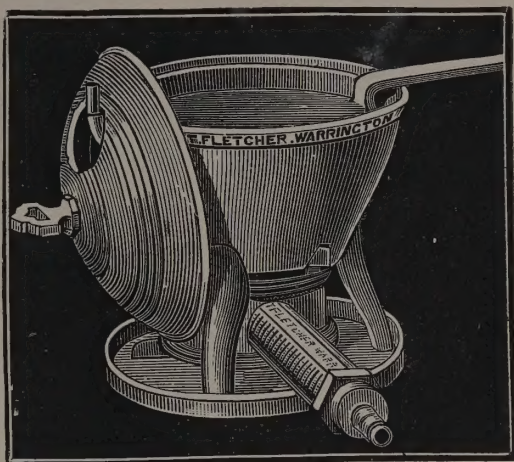


22501734816

LADLE FURNACE.

(FLETCHER, RUSSELL & CO.'S.)

This Furnace will take Ladles 7 inches in diameter. The burner, which is removable, can also be used for heating soldering irons, boiling water, and other purposes. The body and lid are arranged to admit the handles of different size Ladles at different heights, to enable them to be kept perfectly level. It is furnished with a metal skimmer, and hook for lifting the lid.

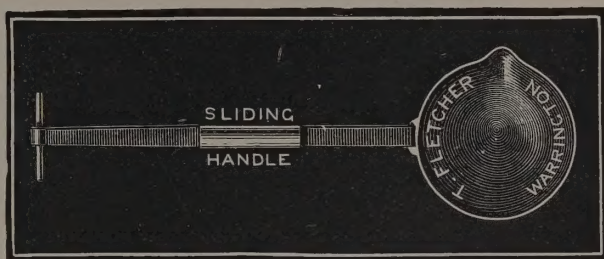


Furnace complete, without Ladle	s.	d.
	13	0

LADLES FOR ZINC AND LEAD.

(FLETCHER, RUSSELL & CO.'S.)

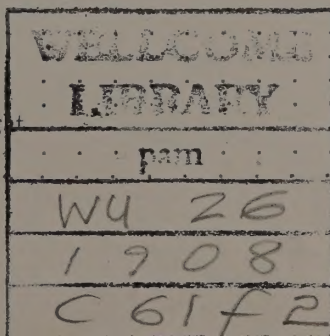
These Ladles, which are true to shape and thickness, are made with cast-iron bowls for lead and malleable iron bowls for zinc. The handles are bolted on, and never wear out. A new bowl can be fixed in a few minutes. The diameter of each is 7 inches. The handles ensure perfect steadiness in pouring, and are always cool; the sliding handle being pushed to the cool end while the metal is being heated.



Ladle with cast-iron bowl, for lead	each	s.	d.
„ with malleable bowl, for zinc	„	4	0
Extra bowls—Cast-iron, for lead	„	6	6
Malleable, for zinc	„	1	3
		3	9

WROUGHT-IRON LADLES FOR LEAD AND ZINC.

No. 1.—5 in. diameter	each	s.	d.
„ 2.—5½ in. „	„	1	9
„ 3.—6 in. „	„	2	0
„ 4.—6½ in. „	„	2	6
„ 4.—4½ in. „	„	3	0
Lead (price fluctuates)	per lb.	1	8
Zinc	„	0	3
M		0	4½
			B



PARAFFIN STOVE.

FOR HEATING VULCANIZERS, FOR MELTING LEAD AND ZINC, AND FOR GENERAL PURPOSES IN THE WORKROOM.

NO WICK! NO SMOKE!! NO SMELL!!!

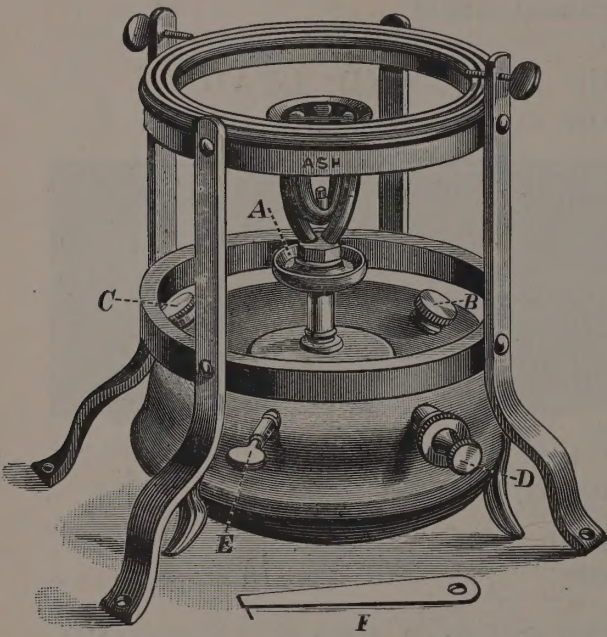
SAFE IN USE, EASILY MANAGED, AND PERFECT IN ACTION.

Adapted for taking any of our Vulcanizers, from the smallest to the largest.

Invaluable for use in places where coal gas cannot be obtained.

To give some idea of its power, we may mention that it will melt 3 lbs. of zinc, starting all cold, in twenty-five minutes.

DESCRIPTION :



- A**—Methylated Spirit Cup.
- B**—Cap to take the place of Burner when the Stove is dismantled.
- C**—Cap which covers opening used for filling the Stove.
- D**—Pump for raising the Paraffin Oil from the Reservoir.
- E**—Tap for regulating the flame and for extinguishing it.
- F**—Needle Point for clearing the spray exit.

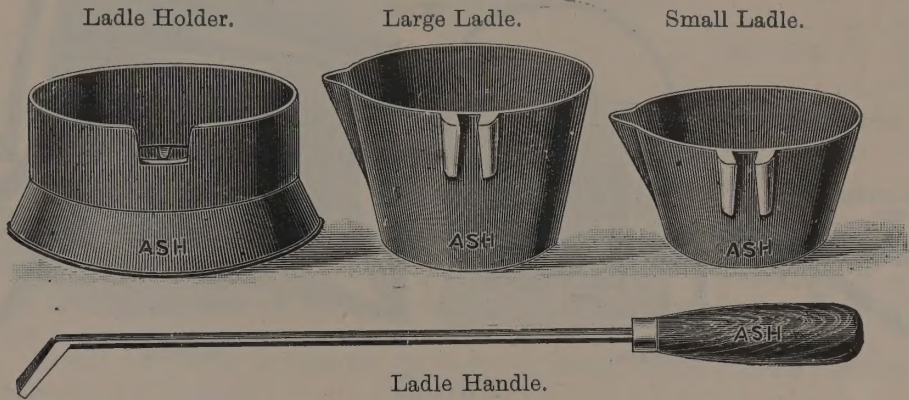
Directions for use supplied with each Stove.

	s.	d.
Stove with Stand complete, as illustrated	21	0
Separately : Stove only	12	0
Stand „	10	0

LADLE HOLDER, LADLES, ETC., FOR "PRIMUS" PARAFFIN STOVE.

The Ladle Holder fits on the top of the frame of the Stove.

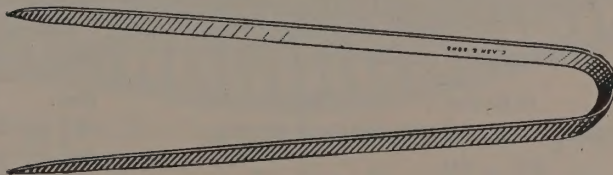
To give some idea of the power of the Stove, we may mention that it will melt 3 lbs. of zinc, starting all cold, in twenty-five minutes.



	s.	d.
Ladle Holder	2	0
Large Ladle	2	0
Small „	1	6
Ladle Handle	1	0

WORKROOM TONGS.

(MR. WALTER SUTTON'S.)



8½ inches long.

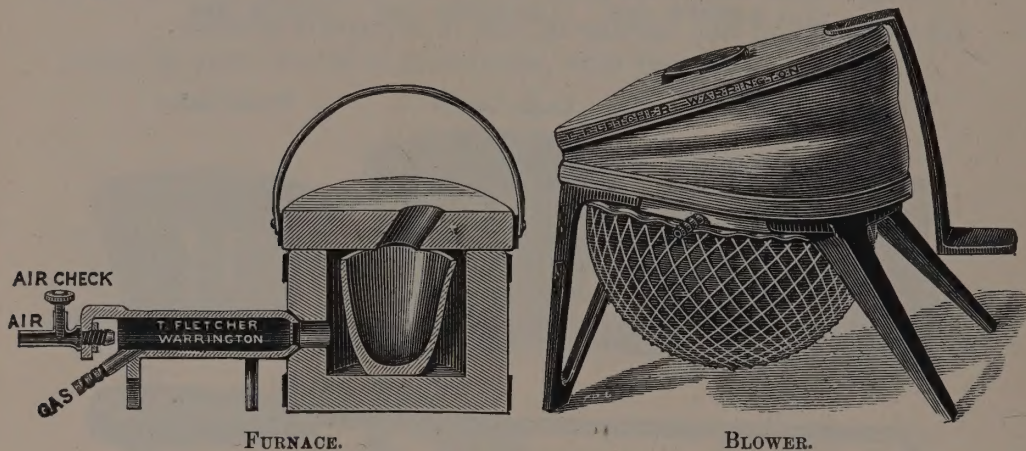
For lifting and carrying about articles which are too hot to be held in the hand.

	s.	d.
PRICE, in sheet steel	1	0
M	B	2

PERFECTED INJECTOR FURNACE AND BLOWING APPARATUS.

(FLETCHER, RUSSELL & CO.'S.)

For melting Gold, Silver, etc.; works equally well with coal-gas or air-gas.



PRICES:

Sizes of Furnaces	6 oz.	2 lb.	6 lb.	12 lb.
Taking Crucibles, Nos.	00	1	3	6
Furnace, as illustrated (Fletcher's, Fig. 41) . .	s. d. 9 6	s. d. 11 6	s. d. 19 0	s. d. 27 6
Blowing Apparatus (Fletcher's, Fig. 9B) . .	30 6	30 6	36 6	36 6
India-Rubber Tubing	3 0	3 0	3 9	3 9
Crucible Tongs	1 0	1 0	1 6	1 6
Bow Tongs	—	—	3 0	4 0
Crucibles, Fireclay	0 1½	0 2	0 5	0 10
„ Salamander	0 4½	0 5½	1 5	2 10
Extra Furnace Bodies	3 0	4 8	8 0	13 0
„ „ Lids.	2 0	2 3	3 9	6 6

Gas supply required.

	Cubic Feet.	Inch.
6-oz. size, 7 to 30 per hour,	$\frac{3}{8}$ pipe	
2-lb. „ 10 „ 40 „	$\frac{3}{8}$ „	
6-lb. „ 25 „ 60 „	$\frac{1}{2}$ „	
12-lb. „ 30 „ 70 „	$\frac{5}{8}$ „	

Crucibles, outside measurement.

High.	Diameter.
2¼ by 2 inches.	
3 „ 2½ „	
4¼ „ 3½ „	
6 „ 4½ „	

Fletcher, Russell & Co.'s List, giving full details concerning the above Furnace, etc., sent on application.

INDIA-RUBBER TUBING.

			s.	d.
Red, $\frac{3}{4}$ -inch bore, any length, smooth inside	per foot		2	0
" $\frac{5}{8}$ " " " " " " " " " " " " " " " "	"		1	6
" $\frac{1}{2}$ " " " " " " " " " " " " " " " "	"		0	9
" $\frac{3}{8}$ " " " " " " " " " " " " " " " "	"		0	6
" $\frac{1}{4}$ " " " " " " " " " " " " " " " "	"		0	6

IMPROVED BRAIDED GAS-TIGHT FLEXIBLE TUBING. (FLETCHER, RUSSELL & CO.'S.)

		s.	d.
$\frac{3}{8}$ -inch bore, best quality	per foot	0	5
$\frac{1}{2}$ " " " " " " " " " " " " " " " "	"	0	6

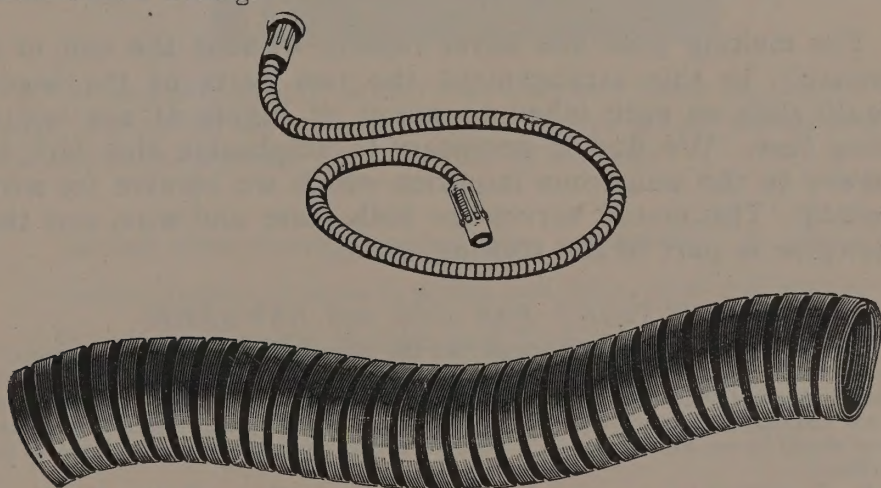
Elastic ends fitted to each length and included in above prices.

FLEXIBLE STEEL TUBING.

(BEST QUALITY.)

Suitable for dental Furnace and Blowpipe Work. Will wear twice as long as ordinary Flexible Tubing ; cannot be kinked or crushed ; will stand tons of external pressure.

It will be found invaluable in those climates which rapidly destroy India-Rubber Tubing.



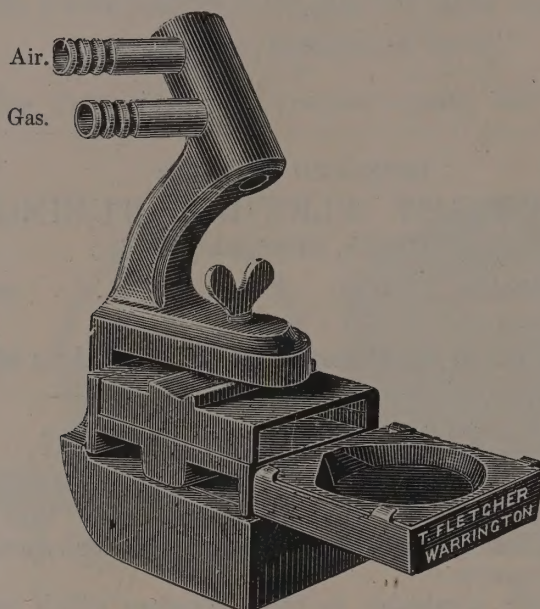
The illustrations show (1) a length, reduced size, with thick rubber connections, and (2) a short piece full size.

		s.	d.
Flexible Steel Tubing, $\frac{1}{4}$ -inch bore, any length	per foot	0	5
" " " " " " " " " " " " " " " "	"	0	7
Thick India-Rubber Connections for $\frac{1}{4}$ -inch size	per pair	0	6
" " " " " " " " " " " " " " " "	"	0	8

Other sizes supplied to order.

MELTING ARRANGEMENT.

(FLETCHER, RUSSELL & CO.'S.)



Slightly under half size.

For melting gold and silver rapidly, without the use of a furnace. In this arrangement the two parts of the ingot mould slide on each other, to admit of ingots of any width being cast. We find it necessary to emphasize this fact, in answer to the numerous inquiries which we receive for wire moulds. This mould serves for both plate and wire, and the Blowpipe is part of the rocking stand.

DIRECTIONS FOR USE and REMARKS:

Connect the blower to the upper tube and the gas to the lower. When the metal is melted in the shallow crucible, tilt the whole apparatus over so as to fill the ingot mould. A sound ingot can be obtained in about two minutes. Thousands of these are in use, and this arrangement is far superior to any furnace for small work. Very bulky scrap should be run into a mass in a moulded carbon block before being placed in the crucible.

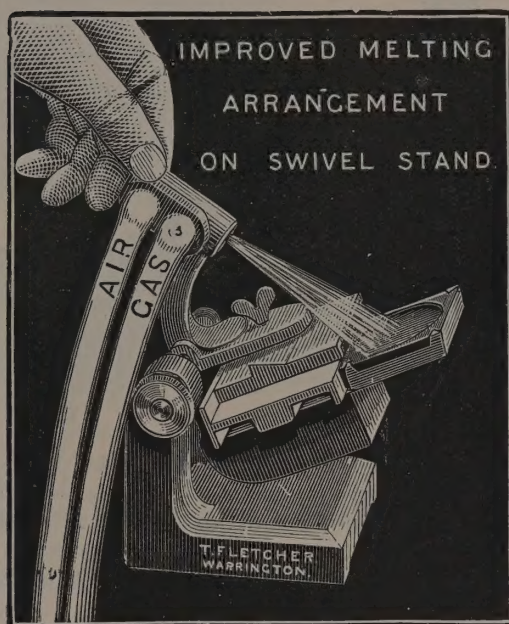
	s.	d.
Melting Arrangement, as engraved, 3-oz. size	13	6
Carbon Crucibles per doz.	2	6
Fireclay " "	3	6
Slides to carry the Crucibles each	0	2

No. 3 size Foot Blower will work the above Melting Arrangement. An extra Slide is given with every half-dozen Crucibles purchased.

MELTING ARRANGEMENT.

(FLETCHER, RUSSELL & CO.'S.)

IMPROVED FORM.



The same arrangement as the three-ounce size shown on the previous page, mounted on heavy swivel stand to prevent risk of pulling over, by the weight of the rubber, when not held by the hand.

	s. d.
Melting Arrangement, Improved form, as engraved . . .	15 6

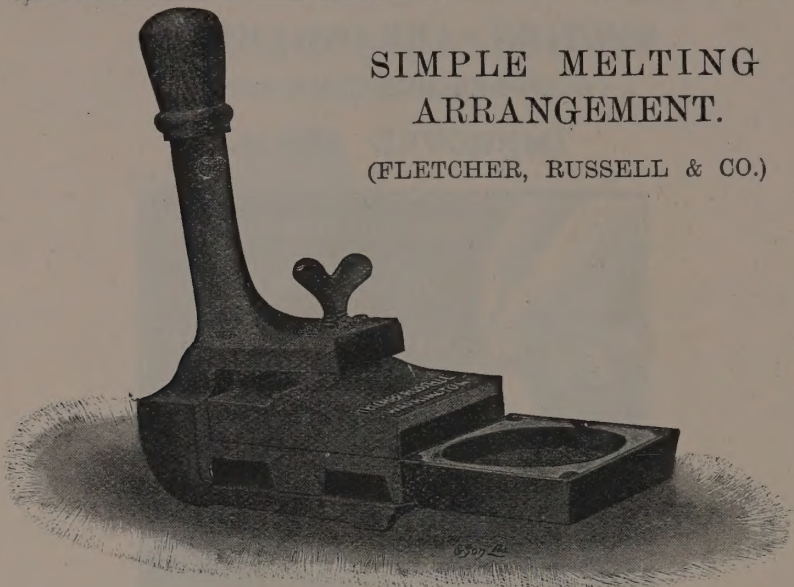
Carbon Crucibles, Fireclay Crucibles, and Slides, as on previous page.

For Inlay, Crown, Bridge, and Continuous-Gum Furnaces, see List A.

Ash's Mineral Body and Gum Enamel, see List A.

		s. d.
Allen's Gum Body, in one-ounce boxes . . .	per box	6 3
" " " Dr. Close's make . . .	"	6 3
" " Enamel, in half-ounce boxes . . .	"	5 3
" " " Dr. Close's make . . .	"	5 3

Other makes of Gum Body and Enamel supplied to order.



SIMPLE MELTING
ARRANGEMENT.

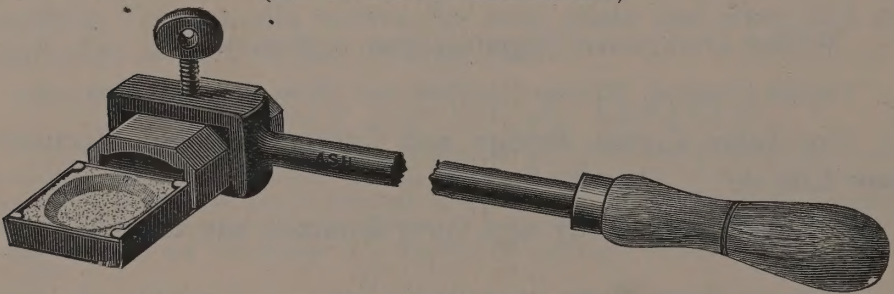
(FLETCHER, RUSSELL & CO.)

This is a modification of the well-known pattern for producing 3-oz. ingots from scrap in one minute or less. As in the other patterns, the ingot can be made any required width, the only difference being that a separate blowpipe is used instead of the fixed one. This, of course, admits of the blowpipe also being used for general workshop purposes.

PRICE, as engraved	s.	d.
	5	6

INGOT MOULD FOR PLATE AND WIRE.

(MR. W. DE C. PRIDEAUX'S.)



About one-third size.

For use with Fletcher's Automatic Hand Blowpipe ; adapted for melting up to about 3, ozs. of gold.

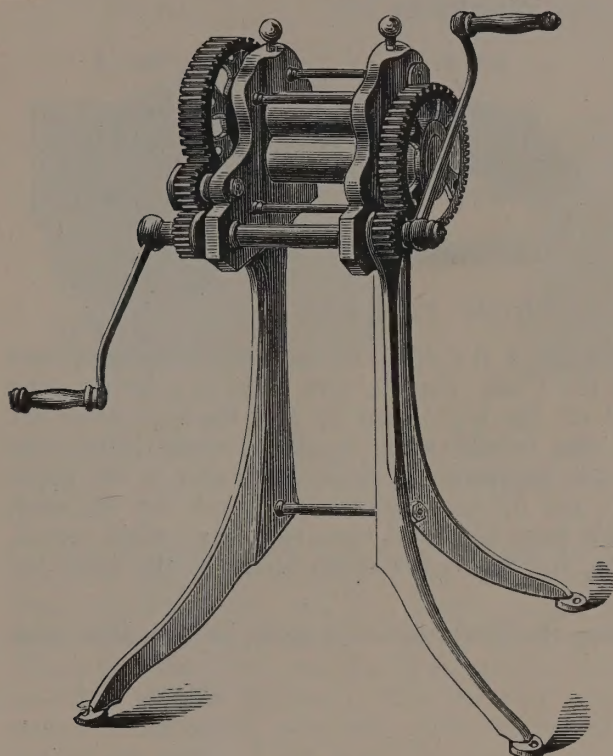
The engraving shows the mould for *plate* with Fletcher's slide and crucible secured to it by the screw on the top of the frame. The upper part of this mould can be removed and the mould for *wire* substituted for it in a few moments.

A slight twist of the handle suffices for pouring the molten metal into the mould.

PRICE complete	s.	d.
	6	0

FLATTING MILLS.

FIG. 3.



Height, about 42 inches.

FLATTING MILL

on iron stand, to fasten to the floor, with hardened steel rollers of the best quality, 4 inches long by $2\frac{1}{4}$ inches diameter, double gearing for multiplying the power, and two handles.

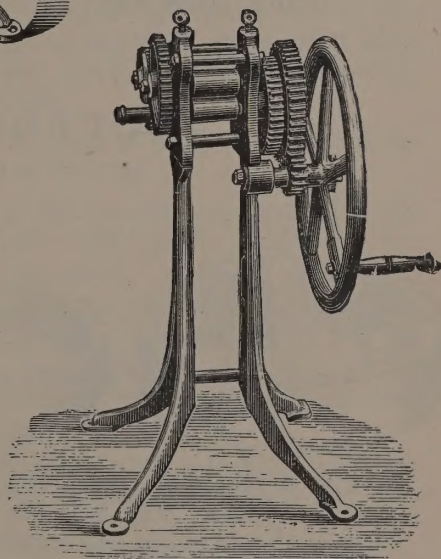
	£	s.	d.
PRICE . . .	15	0	0

FLATTING MILL, similar to Fig. 3, with same size rollers, fitted up with triple gearing and fly-wheel.

(Current prices on application.)

Packing cases charged extra.

FIG. 4.



Height, about 42 inches.

Other Flattening Mills supplied to order.

FLASKS FOR MAKING METAL DIES.

(BAILEY'S.)

FIG. 1.

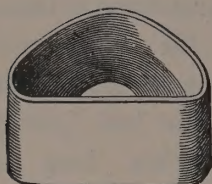
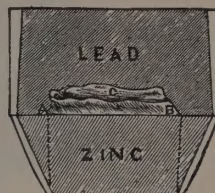


FIG. 2.



FIG. 3.



DIRECTIONS FOR USE:

Place a shallow Plaster Cast, A B C (Fig. 3), on a level surface ; turn over it the lower half of the Flask (Fig. 1), with joint side down ; pack the sand in it, and level off the top ; turn up the Flask, remove the superfluous sand, tap the cast lightly, when it can be easily lifted out ; pour in the Zinc ; when the impression is filled, place over it the upper half of the Flask (Fig. 2), and fill up immediately ; knock out the sand, invert the whole Flask, and pour the Lead upon the Zinc ; when cooled, part and remove the Flasks, and with a few sharp blows at the joint the Dies will separate.

Figs. 1 and 2 constitute the Flask, which is made in two sizes, large and small.

	s.	d.
PRICE, either size	2	0

MOULDING FLASK.

(HAWES'.)

FIG. 1.

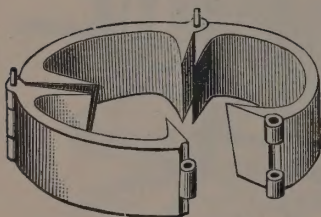


FIG. 2.

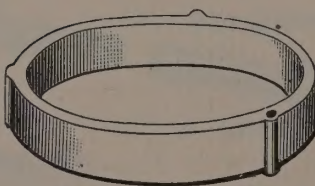


FIG. 3.

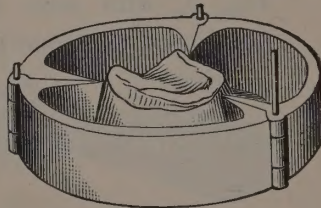


Fig. 1 represents the lower section of the Flask, slightly opened, to show the joints. Fig. 2 is the upper section. When ready for use, the lower section is closed and confined by a Pin, and the Plaster Model placed in it, as represented in Fig. 3.

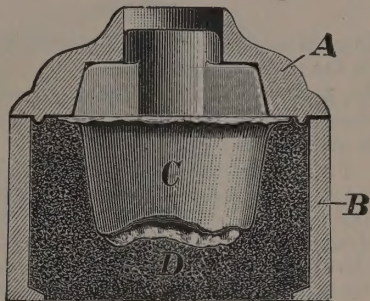
	s.	d.
PRICE complete	12	6

SAND-MOULDING FLASK.

(DR. W. MITCHELL'S.)



Flask Complete.



Section of Flask.

The Section shows: **A**—Coned Top of Flask. **B**—Ring or Lower part of Flask.
C—Zinc Die. **D**—Casting Sand.

Dr. Mitchell states that “the method of using this Sand-Moulding Flask is nearly self-evident; but to prevent any error I would say: Place the ring (**B**) over the plaster model with the largest opening downwards, and pack in the sand or other medium in the ordinary way. When the ring is full, smooth off the surplus with a straight piece of wood or other suitable appliance, turn the ring over, remove the model, and pour the zinc in the usual way, until the mould is full to the level of the top of the sand. Then place the top (**A**) of the flask in position with the squared portions of the recess *fore* and *aft* in relation to the model, and finish pouring until the top is *barely* full.

“When the die is turned out it will be found to have a coned stud on the back by which it can be securely held in the vice.

“This coned stud can be arranged in any special position on the die by turning the top (**A**) of the flask on the ring (**B**) until the squared portions are over the part where the stud is wanted.

“By thus being able to cast the coned stud on the die where the greatest strength is required the striking-up of metal plates is greatly facilitated; moreover, it affords stability in connection with the grip of the vice, and offers so much resistance in the striking-up process that cracking of dies is prevented.

“I find the two sizes in which the flask is made suitable for casting all kinds of dies, ranging between a die for the largest denture down to a die for a single crown.”

	s.	d.
Flask, large size	4	6
„ small size	3	6

THE PEARSALL DUBLIN SAND-MOULDING FLASK.

INVENTED BY MR. W. BOOTH PEARSALL, F.R.C.S.I.

(See pages 76-79 of his book on "*Mechanical Practice in Dentistry.*")

There is no form of Sand-Moulding Flask for dental work which gives so much satisfaction in use as Mr. Pearsall's.

Mr. R. P. Lennox, of Cambridge, who has employed it for some years, says: "When this flask is used in casting a zinc die, a strong cone is formed at the back of the die, from which these advantages follow:—

"The plaster model need not be more than one inch deep at the heel, the zinc can be readily grasped in a vice and otherwise readily handled, and it never cracks under the hammer. With this die and a counter made as above described"—see page 5 *Lennox's Work*—"perfect accuracy in directing the blows is obtained, and the life of the counter is much prolonged, so much so that I find one zinc die, one lead, and one tin counter sufficient for all purposes."

As made the Flask consists of—

Two Moulding Plates (Fig. 1) of the same diameter, but with cone-shaped apertures (*A*, Fig. 3) of different sizes, the larger suited to very large jaws.

Two Sand Rings (*B*, Figs. 2, 3), one deep and one shallow, which fit on the top of the Moulding Plates (see Fig. 2). Some prefer a deep, others a shallow ring; both sizes are useful in the workroom.

Two Counter-Die Rings (*A*, Fig. 4), one large and one small, with which either a large or a small lead, as may be desired, can be obtained.

The six parts here enumerated form a **Double** outfit, which it is desirable to have, but for the convenience of purchasers we have priced them as **Single** outfits; any of the parts can be had separately.

Single Outfit, consisting of—

	s.	d.
Moulding Plate with small aperture	2	0
Sand Ring, shallow	2	0
Counter-Die Ring, small	1	0
Complete	5	0

Single Outfit, consisting of—

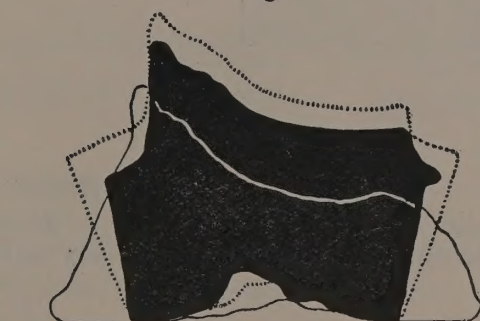
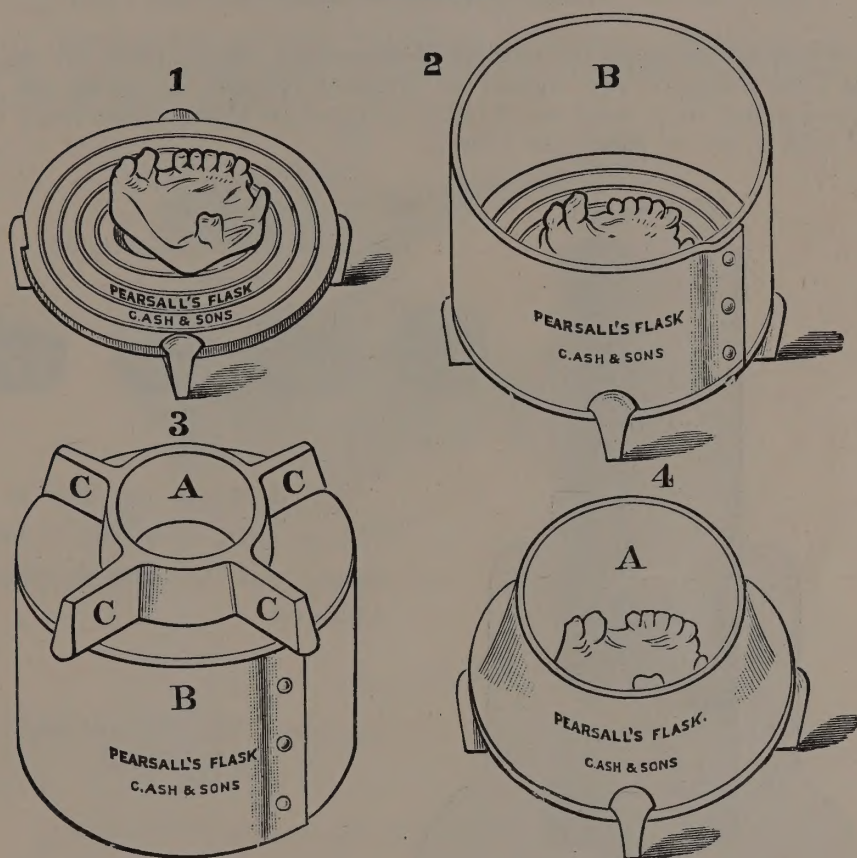
	s.	d.
Moulding Plate with large aperture	2	0
Sand Ring, deep	3	0
Counter-Die Ring, large	2	0
Complete	7	0

Parts separately:

	s.	d.
Moulding Plate with large aperture (Fig. 1)	2	0
" " " small " (" 1)	2	0
Sand Ring, deep (B " 2)	3	0
" shallow (B " 2)	2	0
Counter-Die Ring, large (A " 4)	2	0
" " small (A " 4)	1	0

Full Descriptive Circular sent on application.

THE
PEARSALL DUBLIN SAND-MOULDING FLASK—
continued.



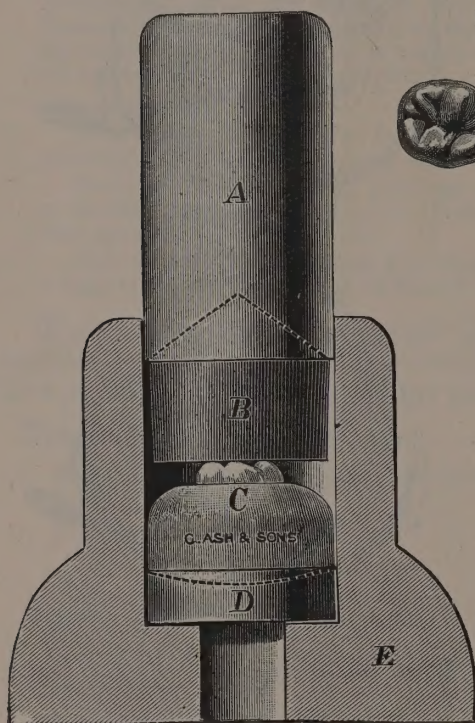
BAILEY DIE 3.LB^s ZINC
ORDINARY DIE ————— 2.3/4 LB^s..
PEARSALL DIE ————— 2.LB^s ..

ASH'S CROWN SWAGER.

(REGISTERED. REG. NO. 334,144.)

There is no limit to the number of dies which can be made for use in this little Swager; any natural or artificial bicuspid or molar can be employed, and very easily and quickly mounted in Composition ready for the Gold Crown to be swaged upon it.

CROWN SWAGER.



Full size.

Illustrations of Crowns made in the Swager.



Any thickness of fine or of 22-carat gold, up to size 5, Ash's Gauge, can be swaged without difficulty.

Descriptive Circular sent post free on application.

DESCRIPTION :

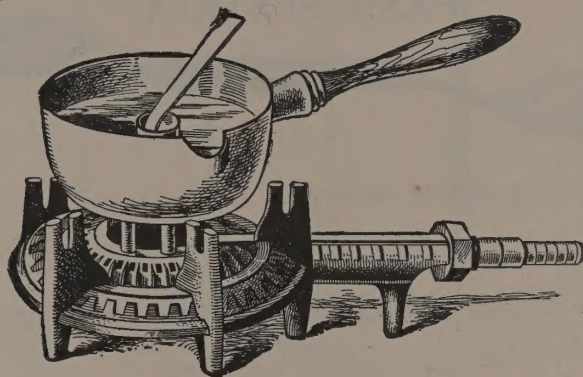
- A**—Plunger. **B**—India-Rubber Block.
C—Composition with Tooth embedded in it. **D**—Bed-Plate.
E—Section of Base with hole in the floor for dislodging Bed-Plate **D**, etc.

	s.	d.
Crown Swager with two Rubber Blocks	7	6
Additional Bed-Plates D each	0	4
Extra-Hard Swaging Composition, in $\frac{1}{2}$ -lb. boxes . per lb.	5	0

GILDING WITHOUT A BATTERY.

PURE GOLD CONCENTRATED SOLUTION.

An excellent preparation for gilding regulating appliances, metal crowns, pieces of bridge work, full dentures, etc., to which it is desired to impart a fine gold surface.

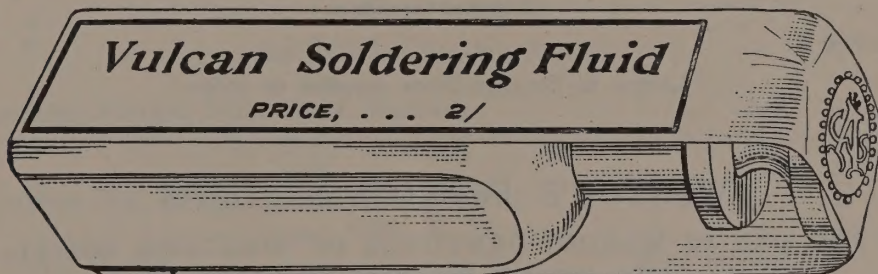


Supplied in one-ounce bottles, with Directions for Use.

	s. d.
PRICE, per bottle, with strip of zinc	5 3

VULCAN SOLDERING FLUID.

Vulcan Soldering Fluid contains fluxible properties never before offered to metal workers. It is a most valuable preparation, intended to supersede borax, and should be used by every Dentist.



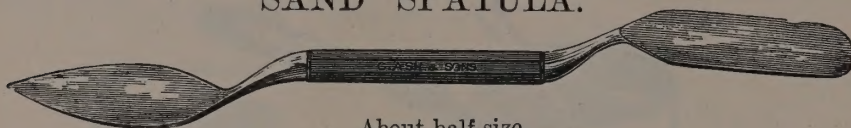
It is much superior to borax, cleaner in use, can be easily applied where required, does not blister the work as borax is apt to do, and a better joint can be obtained with it than with borax. It is highly spoken of by all who use it.

Supplied in one-ounce bottles.

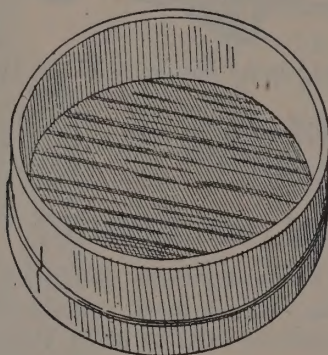
	s. d.
PRICE. per bottle	2 0

SPECIALLY PREPARED FOR DENTAL PURPOSES.

PRICE.	.	.	.	.	.	.	.	.	.	.	.	.	per 14-lb. bag		s. 1	d. 4
--------	---	---	---	---	---	---	---	---	---	---	---	---	----------------	--	---------	---------



Spatula for mixing casting sand, etc.	each	<i>s.</i>	<i>d.</i>
		2	0



	12 inches diameter.	s.	d.
PRICE		3	3

Larger or Smaller Sizes supplied to order.

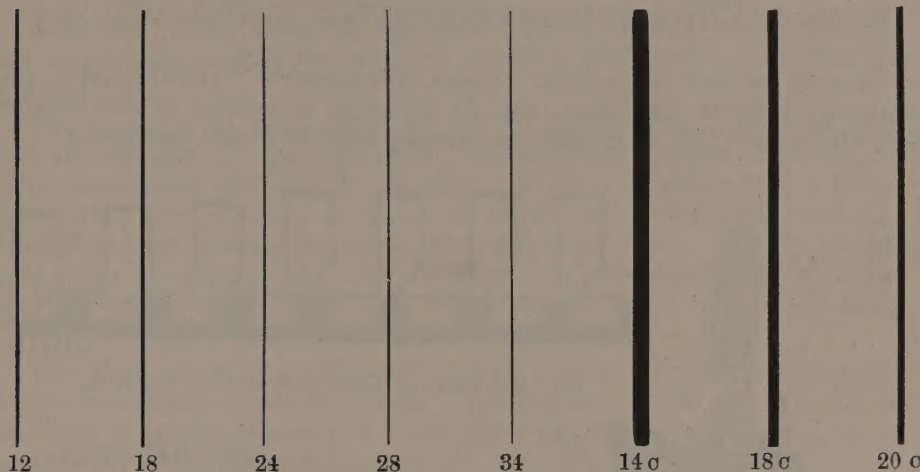
A full description of the "Metallo-Plastic" Process will be found in Chapter XV. of "Harris's Principles and Practice of Dentistry."

PRICE of Flask		s.	d.
Weston's Metal for Lower Dentures, in 2-oz. packets	per pkt.	3	2
„ Solder	per oz.	4	2

BINDING WIRE AND CRAMP WIRE.

BINDING WIRE.

CRAMP WIRE.



The **Binding Wire** is supplied in $\frac{1}{4}$ -lb. reels in sizes :

		s.	d.
No. 12—Thick	per reel	0	3
„ 18—Medium	„	0	4
„ 24—Thin	„	0	4
„ 28—Fine	„	0	6
„ 34—Finest	„	0	9

Binding Wire on reels is much more convenient to handle than in hanks; it can be kept tidier, and used without unnecessary waste.

The **Cramp Wire** is supplied in 1-oz. hanks in sizes : No. 14c—Thick; No. 18c—Medium; No. 20c—Thin.

		s.	d.
Any size	per hank	0	1½

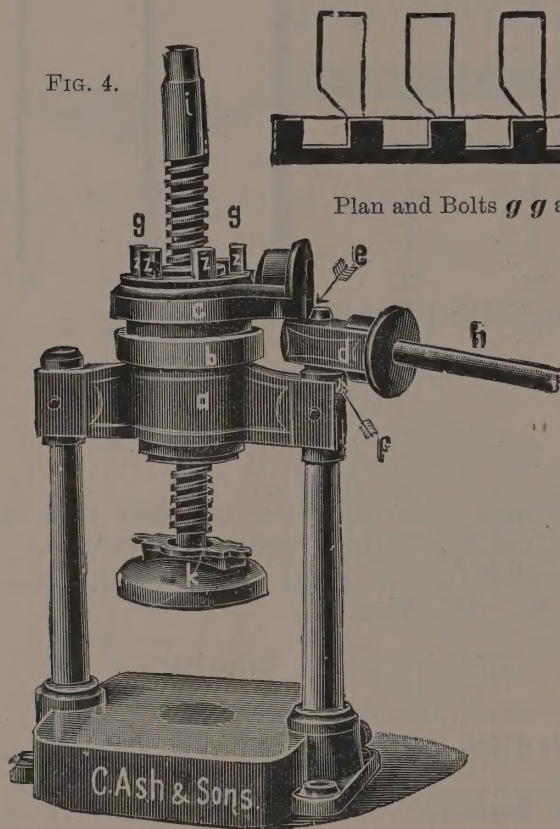
ARTICLES (VARIOUS).

		s.	d.
Casting Rings, Iron, 5½ in. diameter	each	1	9
„ „ „ 5 in. „	„	1	6
„ „ „ 4 in. „	„	1	3
Casting Die Rings, Iron, 4½ in. diameter	„	1	6
„ „ „ 4 in. „	„	1	3
French Chalk	per 7-lb. bag	1	0
Gum Shellac	per lb.	4	0
Marble Dust	„	0	9
Silex in Powder	„	1	0
„ in Liquid	per bottle	0	9
Vermilion	per oz.	0	8
Water of Ayr Stones, in slips, for polishing, large	per doz.	1	0
„ „ „ „ „ small	„	1	0

ASH'S SWAGING PRESS, WITH DUCHSCHER'S DIFFERENTIAL LEVER ACTION.*

Among modern mechanical Presses, Duchscher's "Differential" undoubtedly takes a first place, and its principle is applied in the Swager here illustrated (Fig. 4) to meet an existing want in dental mechanics.

FIG. 4.



Plan and Bolts *g g* and slots in Bolt Collar *b*.

DESCRIPTION:

- a*—Stirrup with female screw.
- b*—Drop-Bolt Collar.
- c*—Differential Lever.
- d*—Intermediate Lever.
- e*—Revolving Collar.
- f*—Lever Pin.
- g g*—Drop-Bolts.
- h*—Hand Lever.
- i*—Screw Plunger.
- k*—Pressure Plate.

Illustration Fig. 4 clearly shows the positions of these several parts.

There are rectangular openings, placed at regular distances, in the circumference of the Differential Lever *c*, and the Drop-Bolt Collar *b*, into which the Drop-Bolts *g g* grip. As will be seen from the Plan, these Drop-Bolts are bevelled at the bottom; when, therefore, the lever is pushed round, they slide on the rim of *c*, until one of them slips into an opening and presses against the perpendicular face of same. Connection is thus established with the Screw Plunger *i*, which revolves and "presses."

* Differential here signifies "an arrangement by which a regular, powerful, and slow movement is obtained for carrying forward a tool from the motion-work whereby the tool is rotated."

ASH'S SWAGING PRESS—*continued.*

After the Hand Lever *h* has been pushed forward until the first bolt drops into its slot, the action is repeated until sufficient pressure is obtained.

The number of openings in *c* and of Drop-Bolts is one each less than the number of openings in *b*; this variation forms the key of the Differential-Lever system. If for each opening in *b* there were a Drop-Bolt and an opening in *c*, all the bolts would grip at the same time, and would thus only produce the same effect as a single bolt. But by having the number of openings in *c* and the number of Drop-Bolts one each less than the number of openings in *b*, bolt after bolt grips successively when the lever is advanced.

The Plan shows this difference in the number of openings in *b* and in the Drop-Bolts—hence the name “Differential”—from which it will be seen that it is only necessary to move the Lever *h* a distance equal to one-seventh of the distance between two openings.

This need of so slight a movement renders it possible, without increase of muscular effort, to obtain greater leverage with the “Differential” than with any other form of Press. For instance, with the Press represented in Fig. 4 it is possible to obtain the enormous pressure of over 10,000 lbs. to the square inch, which can be applied in a most gradual and satisfactory manner; the pressure exercised with it is regular and continuous, not jerky, sudden, or irregular, like that applied by hammering or with a centrifugal press.

Any kind of denture can be successfully swaged in the Press.

It is specially recommended for producing a dead fit in saddle-back plates that are strengthened at the base, which strengthening usually causes rocking and springiness in similar plates struck-up with a hammer.

The great advantage possessed by plates swaged in the Press is this: No warping occurs when the teeth are soldered to them. This valuable feature is secured by equal distribution of pressure on the molecules of metal all over the plate.

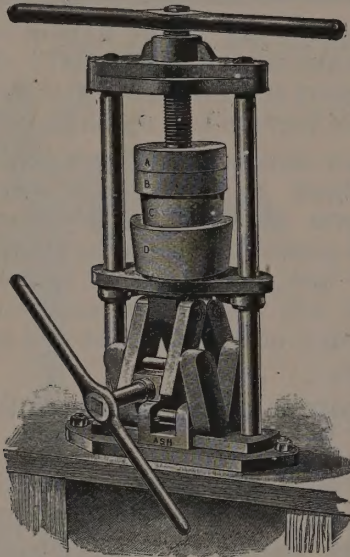
In plates swaged with the hammer the molecules of metal are equally pressed, consequently such plates lack permanency of shape under fire, and warping is more or less the result when the teeth are soldered to them.

Swaging Press, as illustrated, for fixing on work-	£	s.	d.
bench (Fig. 4)	5	15	0
Strong Iron Stand for holding Press . . . extra	2	0	0
<i>M</i>		0	2

**KNÖFERL'S SWAGING PRESS,
WITH TOGGLE-JOINT LEVER ACTION.**

(REGISTERED. REG. NO. 461,126.)

With Knöferl's Swaging Press a pressure of from 10 to 20 tons to the square inch can be applied to a metal plate in a most gradual and steady manner ; the pressure is regular and continuous, not jerky, sudden, or uneven, as is the case when a plate is struck-up with the hammer.



A and B—Pressure Plates. (Only
one Pressure Plate is now supplied
with the Press.)

C—Die.

D—Counter Die.

The paragraphs 1, 2, 3, and 4 in thick type on the previous page also apply to Knöferl's Press.

	£	s.	d.
Small size Press	5	10	0
Large „ „	6	10	0

Directions for Use are sent with each Press.

ASH'S HYDRAULIC SWAGING PRESS.

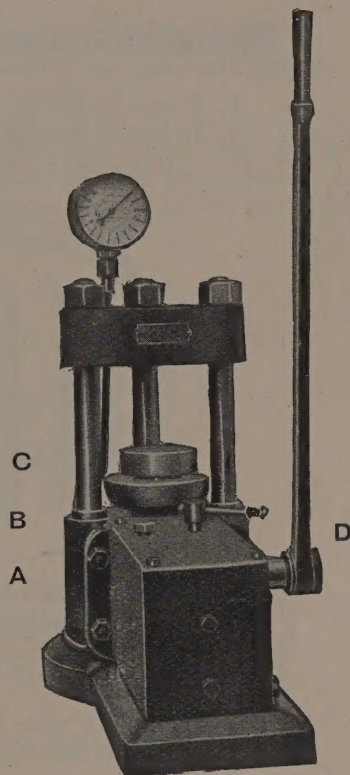
With this simple, yet very powerful Swaging Press a pressure of from 1 ton up to 14 tons on the ram can be applied with very little pressure.

The handle is purposely fixed in the upright position for two reasons:

1. To save space; and
2. To give complete purchase over it in the application of the pressure.

The pressure can be so gently and easily applied that there is no danger of the metal denture slipping or shifting during the process of swaging.

The Press is constructed on the most scientific lines; it is so strong that it is impossible to break it, and yet so simple in action that a boy can work it.



A—Lid of Tank.
B—Governor Nut.
C—Pressure Plate.
D—Valve.

DIRECTIONS FOR USE:

First remove Lid A and pour water into the Tank until it is three-quarters full. Be careful that the tank is clean before the water is poured into it. When it is three parts filled screw the lid on again.

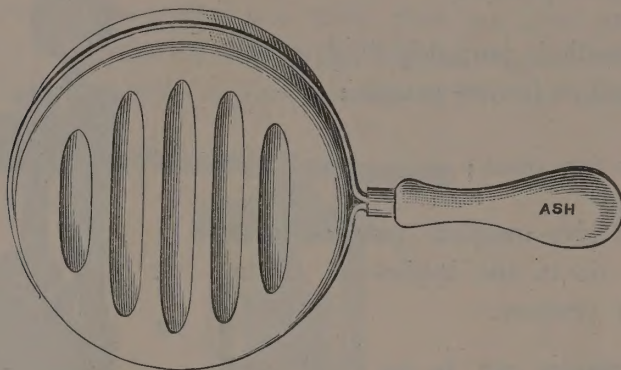
Make the Dies as deep as possible, since it is important that the Ram of the Swager is not pumped up to a greater extent than 2 inches. For ordinary swaging a pressure of from 7 to 9 tons is employed. When a pressure of more than 9 tons is required it can be obtained by screwing down the Governor Nut B one or two turns, according to the increased amount of pressure required. The Pressure Plate C, which is provided with a levelling Disc, must be placed on the top of the Dies. When the swaging process is completed release the Valve D, and the Ram will descend to its lowest position. If the Press is not to be used again immediately, the Ram should be pumped up about 2 inches and left there.

Ash's Hydraulic Press, complete with Governor	£	s.	d.
and Gauge, as illustrated	21	0	0

ASH'S EASY-TO-CUT SOLDERING BLOCK.

The Easy-to-Cut Soldering Block is unlike anything at present in use among Dentists, and possesses the following advantages:—

1. It can be cut to any shape with a knife.
2. It is soft enough for pins to be inserted in it for securing the work in position—a valuable feature to the crown-and-bridge worker.

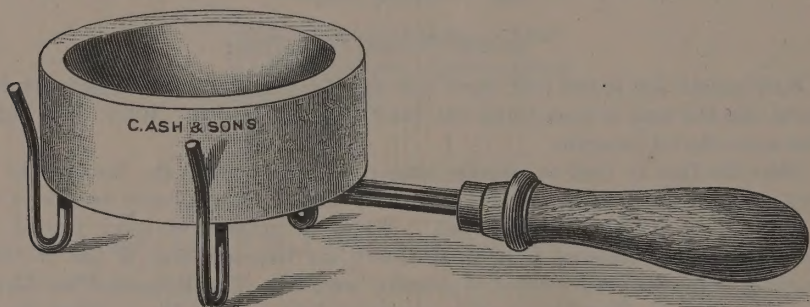


3. It is a non-conductor of heat.
4. It is not likely to crack in ordinary use.

Our trials with it have been most satisfactory.

	s.	d.
Block complete with Handle	3	3
„ without Handle	2	6

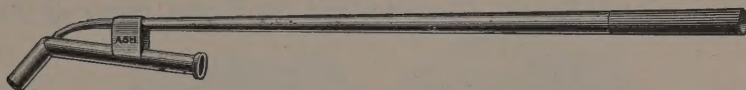
ASBESTOS SOLDERING BLOCK.



Size of Block: Diameter, $4\frac{1}{2}$ inches; thickness, $1\frac{1}{8}$ inches.

	s.	d.
PRICE of Block complete with Handle and Frame	3	9
<i>Separately:</i>		
Block	2	6
Handle and Frame	1	3

ASH'S MOUTH BLOWPIPE.



Ash's Mouth Blowpipe has a distinct advantage over the ordinary mouth blowpipe, in that with it the flame can be directed or guided to any point of the work, instead of the work having to be carried to the flame, as is the case with the ordinary mouth blowpipe.

	s. d.
In Brass, with tinned end	3 0

MOUTH BLOWPIPES.



13 inches long.

Mouth Blowpipes , in Brass, lacquered, with hollow chamber, as illustrated, to hold any moisture that may escape from the mouth. With ivory mouth-piece, and two nozzles	each	s. d. 2 9
The same without moisture chamber	"	1 9
Mouth Blowpipes , plain, with tinned ends, from 11 to 14 inches long	per inch	0 1

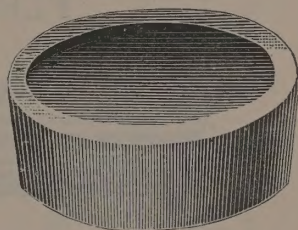
MOULDED CARBON BLOCK.

(FLETCHER'S.)

For supporting work under small blowpipes. It is cleanly, a perfect non-conductor, and very durable.

Diameter, $4\frac{1}{4}$ inches ; thickness, $1\frac{1}{2}$ inches.

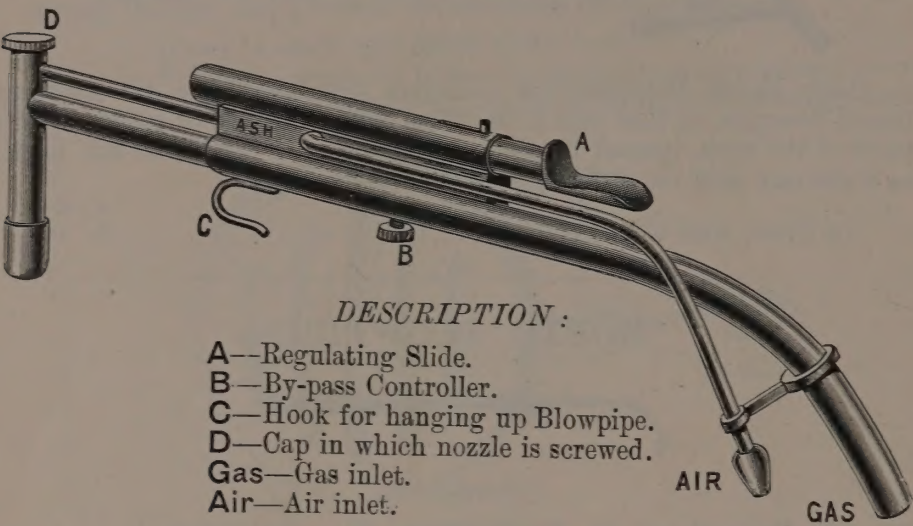
	s. d.
PRICE	1 6



Soldering Coals , of compressed willow charcoal :	s. d.
Large size, with flat sides, 2 × 2 × 6 inches	per block 1 6
Small " " 1½ × 1½ × 5 "	" 0 9
One of these will outlast 50 blocks of charcoal.	
Fine Willow Charcoal , in selected sticks, free from flaws	per lb. 1 0

ASH'S PERFECT AUTOMATIC BLOWPIPE.

(Patented in Great Britain, Germany, and the United States of America.)

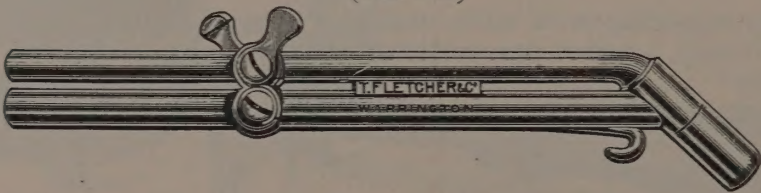


Any size flame between a large heating-up flame and a needle flame can be obtained in a moment with Ash's Perfect Automatic Blowpipe ; it is in every way an ideal blowpipe.

PRICE, in Brass, lacquered	s. d.
	10 6

FLETCHER'S BLOWPIPE.

(FIG. 8 C.)

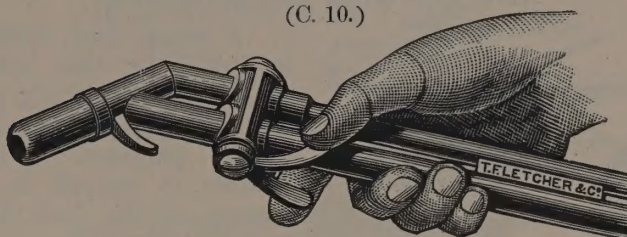


With improved central tap arrangement, gas and air supplies independent and under control of one finger. It is designed for jets not exceeding 1/8-in. bore. Requires Foot Blower, size No. 3.

PRICE, as illustrated	s. d.
	9 0
„ without Taps	4 3

FLETCHER'S AUTOMATIC BLOWPIPE.

(C. 10.)



This will be found a simple and most extraordinarily efficient Blow-pipe for ordinary workshop use. Both gas and air are controlled with a movement of the finger, a few minutes' practice giving perfect mastery over the character of the flame. It consumes about 10 cubic feet of gas per hour at full power. Requires Foot Blower, size No. 3.

PRICE, as illustrated	s.	d.
	9	0
The same on Stand	12	6

SIZES OF BLOWPIPE JETS.

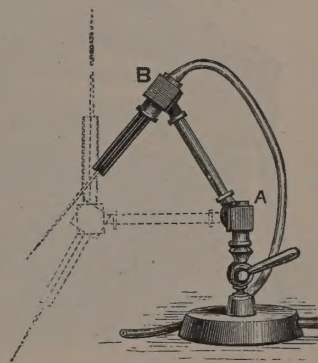
0	1	2	3	4	6	8
•	•	•	•	•	•	•

PRICE	each	s.	d.
		0	3

FLETCHER'S DOUBLE-JOINTED HERAPATH BLOWPIPE,

As used and recommended by Dr. Angle in his work on Regulating Teeth, etc.

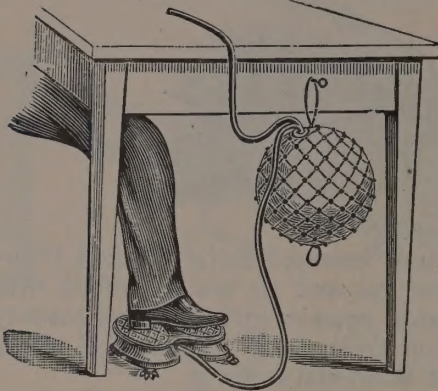
PRICE	s.	d.
	7	6



For Petrol Blowpipe see page 3 of Cover.

STANDING'S PORTABLE DOUBLE FOOT-BELLOWS AND RESERVOIR.

(FOR USE WITH THE BLOWPIPE.)



A steady and continuous blast is given by this compact little apparatus, sufficiently powerful for any blowpipe that is used for dental purposes. The double bellows is worked by a rocking motion of the foot, and requires very little exertion.

As shown in the engraving, the air reservoir can be suspended by the side or underneath the work-bench in any convenient position where it is not likely to get damaged.

PRICE, complete with India-rubber tubing, as	£	s.	d.
illustrated	1	0	0
Large size for Furnace work	1	5	0

FLETCHER'S FOOT BLOWERS.

These Blowers (Fig. 9) have proved themselves to be efficient, simple, strong, and able to stand hard and constant work. The pattern is now made in the following sizes :—

	s.	d.
Size 3, 13 by 10 by 6½ in. deep	26	0
„ 5, 15 „ 12 „ 7 „	33	6

FIG. 9.

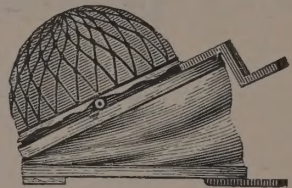
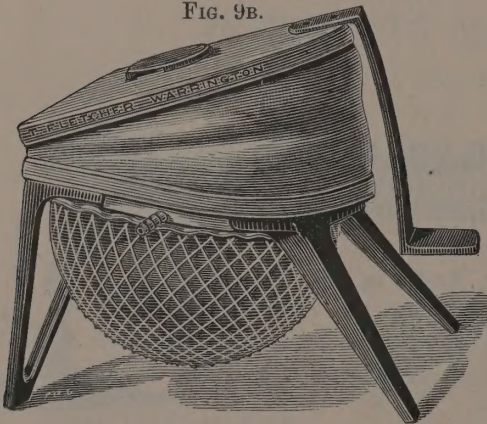


FIG. 9B.



This pattern, by reversing the position of the blower, reduces the risk of mechanical injury to the disc, and does away with the necessity for a wood casing or protection. It also prevents the valve from picking up dirt from the floor, keeping the whole arrangement cleaner, and the valves in more perfect order.

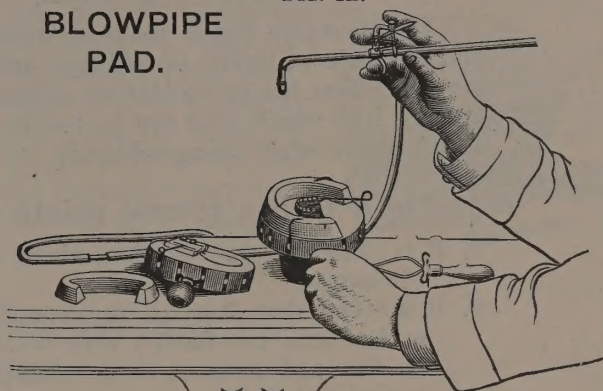
Size 3, same dimensions as Fig. 9	each	30	6
„ 5, „ „ „ size 3 „ 9	„	36	6
Rubber Discs, for size 3	each	2s. 8d.	for size 5 „ 4 0
Nets, „ 3	„	1s.	„ 1 4

(Two Rubber Discs are used on each Blower.)

MELOTTE'S SOLDERING APPLIANCES.

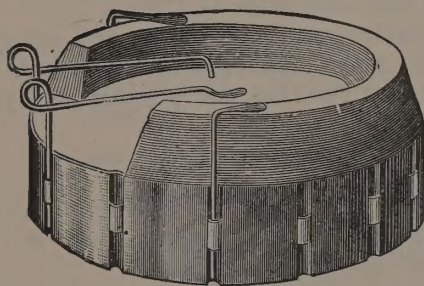
FIG. 1A.

BLOWPIPE PAD.



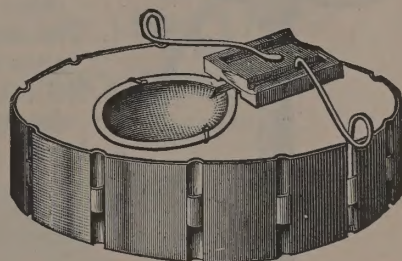
Blowpipe, Blowpipe Pad, etc., complete.

FIG. 2.



Blowpipe Pad, with Rim B in position.

FIG. 3.



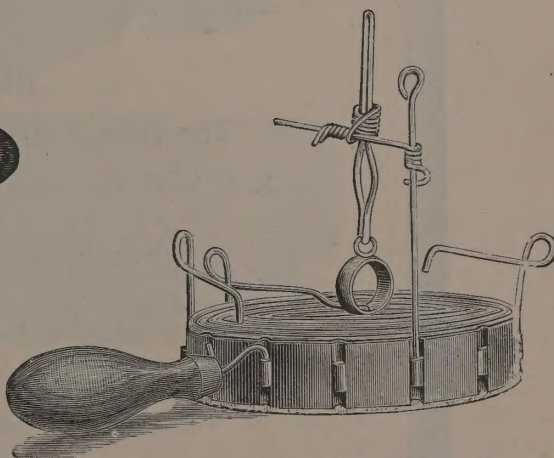
Blowpipe Pad, with Ingot Mould and Crucible.

FIG. 5.

FIG. 4.



Handle for lifting the Blowpipe Pad. The points can be inserted in any two of the loops on the metal band which is fixed round the asbestos.

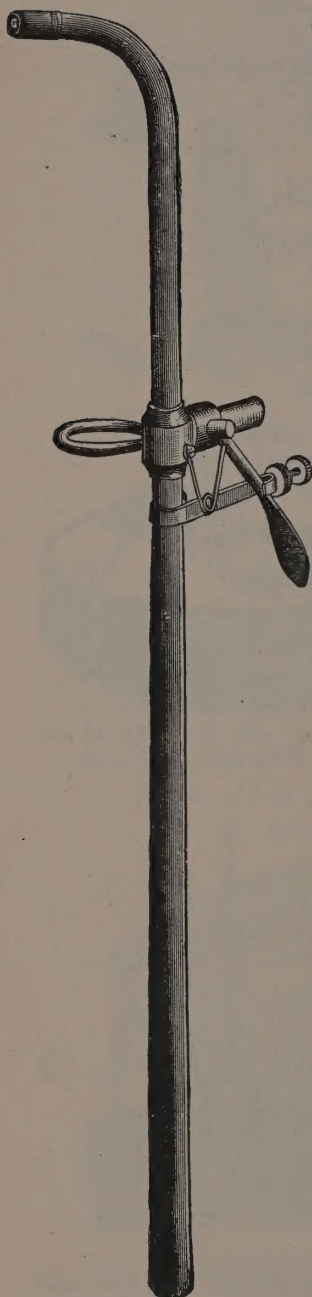


Blowpipe Pad, showing vertical and horizontal wires which support the clamp that holds a band while it is being soldered.

MELOTTE'S SOLDERING APPLIANCES—*continued.*

BLOWPIPE PAD.

FIG. 1.



About half size.

The Blowpipe Pad is about $4\frac{1}{2}$ inches in diameter, and is made of layers of asbestos, arranged in such a manner that the two soldering surfaces are a perfect cushion into which pins can be readily thrust to hold small articles while being soldered.

The Pad has several points of merit :

1. It is clean and very durable, which cannot be said of charcoal.
2. It is better than charcoal on account of its uniform surface and the facility with which articles can be fastened upon it, with clamps or pins for soldering.
3. It provides a means to the Dentist of readily melting his filings and scraps of gold, silver, and other metals, and thus utilising them.
4. The clamping devices save much time and annoyance in getting articles fastened for soldering.
5. No other Asbestos Pad has the pinning and yet durable surface.
6. It will last for years and improve with use.

Blowpipe Pad with Removable Rim, Ingot	s.	d.
Mould, Crucible, and five Clamps, complete	8	0

Parts separately :

Crucibles	each	0	3
Ingot Moulds	„	2	0
Removable Rims	„	1	0

BLOWPIPE.

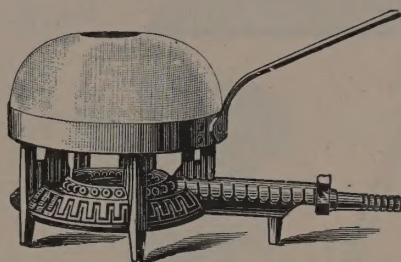
The special merits of this Blowpipe are :

1. It is always ready for use, and saves gas, *as all the gas is utilised* ; in this item alone it will pay for itself in a short time.
2. As the flame moves with the Blowpipe, it can readily be inserted, and soldering done, in places inaccessible with the ordinary mouth Blowpipe and separate gas jet.
3. It is the cheapest and best Blowpipe for the many wants of the Dentist.

PRICE, Nickel-plated throughout, complete	s.	d.
with Rubber Tubing	12	6

FLETCHER'S PLATE DRYER AND HEATER.

This consists of a porous fireclay dome, resting on one of Fletcher's No. 10 standard burners. Size of dome inside, 4 in. diameter, 2 in. deep. It will take work up to 3 inches diameter, and will heat a block of iron over 1 lb. weight to clear redness with the ordinary burner as engraved, without the assistance of a blowpipe or blast of air.



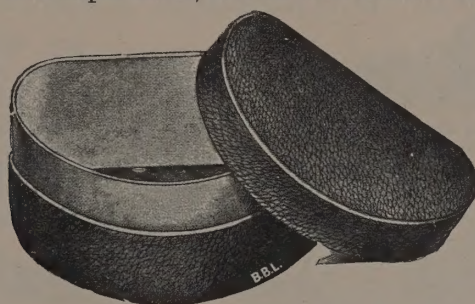
	s.	d.
Burner	1	10
Fireclay Dome, with handle.	4	0
Complete, as illustrated	5	10

Cheaper Form :

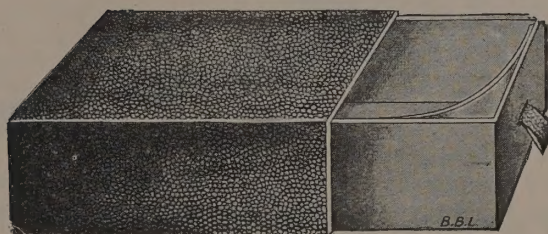
	s.	d.
Cast-iron Dome	0	10
Burner	1	10
Complete	2	8

CARD BOXES FOR DENTURES.

Lined with Red Paper inside, covered with Morocco Paper outside.

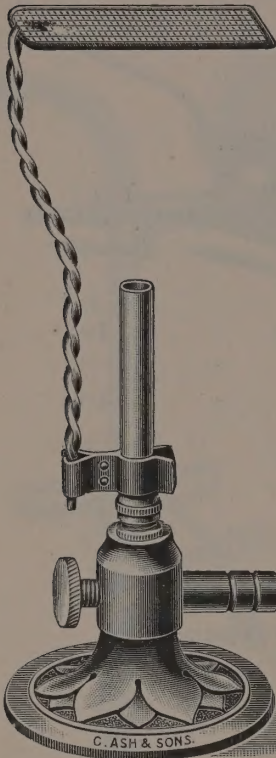


Half-Oval.



Oblong.

	Oblong.	per doz.		per gross.	
		s.	d.	s.	d.
For Partial Sets, Half-Oval		1	6	15	0
„ Half „ „		1	9	18	0
„ Partial „ Oblong		1	6	15	0
„ Half „ „		1	9	18	0

WIRE SOLDERING FRAME.

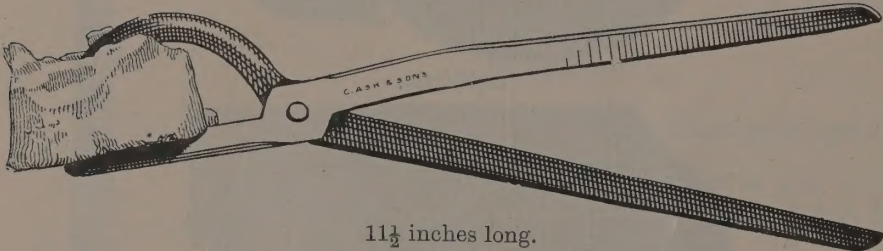
(MR. W. B. SANSOM'S.)

Mr. Sansom's Frame is very useful for heating up crowns, bridges, etc., for soldering. By means of the clip it can be adjusted to any height within its range.

	s.	d.
Soldering Frame . . .	2	0
Bunsen Burner . . .	2	0

ZINC MODEL AND FLASK TONGS.

(MR. WALTER SUTTON'S.)

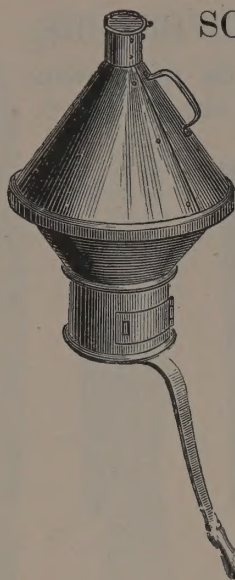


11½ inches long.

It is now some years since Mr. Sutton introduced the Zinc Model and Flask Tongs here illustrated. He says: "They grasp a zinc model so firmly that the teeth can be filed down without shifting. At present, I believe a rag or glove is generally used, and the result is a smouldering smell of burning rags. The tongs are so useful to me that I would not be without them if they cost a guinea. They only require to be known for members of the Profession to appreciate their utility."

PRICE 3 0

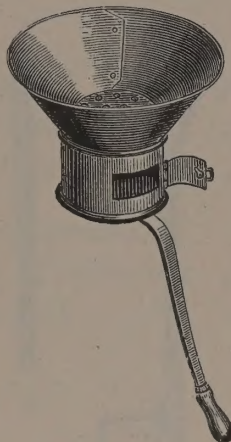
SOLDERING PAN.



In sheet iron, with cover, for gradually warming up pieces with mineral teeth before soldering, and also for gradually cooling them afterwards.

The handle has a loose pivot, to allow the pan to revolve.

10 inches high, $6\frac{1}{2}$ diameter.



PRICE.

s. d.
7 6

BRITTAN'S SOLDERING SPOON.

With wire handle and gauze bowl, supported underneath by two iron stays.

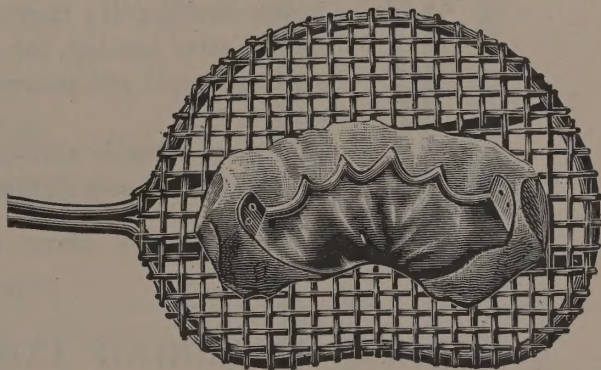
The shape of the Spoon is so convenient that any case can be soldered upon it, and when the case is red-hot the handle remains perfectly cool.

Mr. Brittan says: My method of using the Spoon is as follows: The teeth or bands having been waxed to the plate ready for inserting in plaster and sand, I mix this as usual, put sufficient for the case on the gauze of the Soldering Spoon, and insert the case. Should I be in a hurry, I put the spoon over a low flame *at once* to hasten the setting, and when the case is red-hot I solder. The advantages of my plan are these:

- A great saving of time.
- I have no need of a clumsy charcoal slab.
- The plaster and sand mixture does not crack in the Spoon.
- By means of the Spoon, work can be done with more ease, comfort, and certainty than by any other method.

To remove the case from the Spoon.—Let the case cool, *place it in water for a few moments*, and then tap the spoon lightly on the bench—this is all that is necessary.

It is well known that after a mixture of plaster and sand has once been made red-hot, it will fall to pieces if it be put into water.



About two-thirds size.

PRICE of Soldering Spoon 1 6
Extra gauzes for renewing each 0 6

FIG. 1.

FIG. 2.

FIG. 3.



$4\frac{3}{4}$ in. long.



$4\frac{3}{4}$ in. long.



$4\frac{1}{4}$ in. long.

SOLDER TWEEZERS.

		s.	d.
Fig. 1. Blunt	. . . each	0	9
„ 2. Pointed	. . . „	0	9
„ 3. Blunt	. . . „	0	4

No. 4, *not illustrated* :

Blunt, $4\frac{1}{4}$ inches long	„	0	6
Pointed, $4\frac{1}{4}$	„ „	0	6

SELF-CLOSING SOLDERING TWEEZERS.

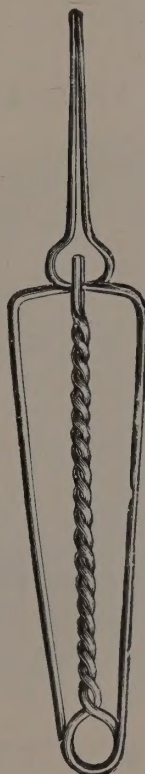
FOR HOLDING CAPS,
CROWNS, OR OTHER LIGHT
WORK
WHILE SOLDERING.

Fig. 5. Flat pointed.

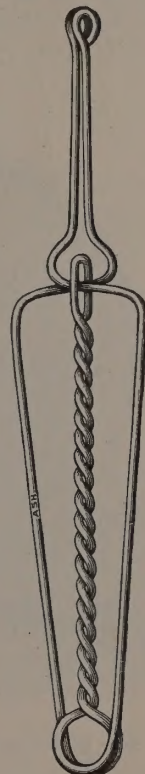
„ 6. With loop ends.

FIG. 5.

FIG. 6.



$6\frac{1}{2}$ in. long.



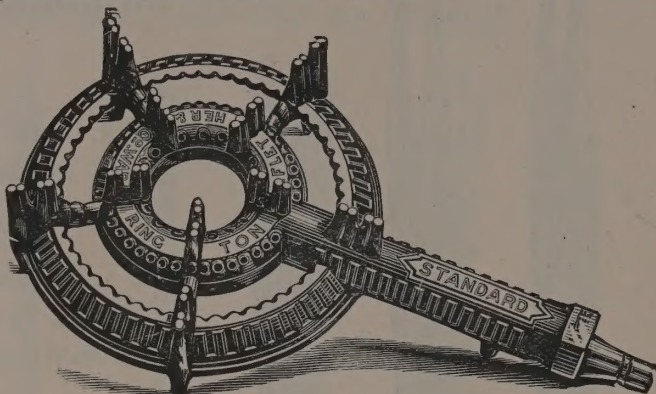
$6\frac{1}{2}$ in. long.

PRICE, dull Nickel-
plated, either form . each 0 6
M

STANDARD GAS BURNERS.

(FLETCHER, RUSSELL & CO.'S.)

These Burners are designed as a complete series of the highest and most perfect class, in the simplest possible form, and in one single casting.

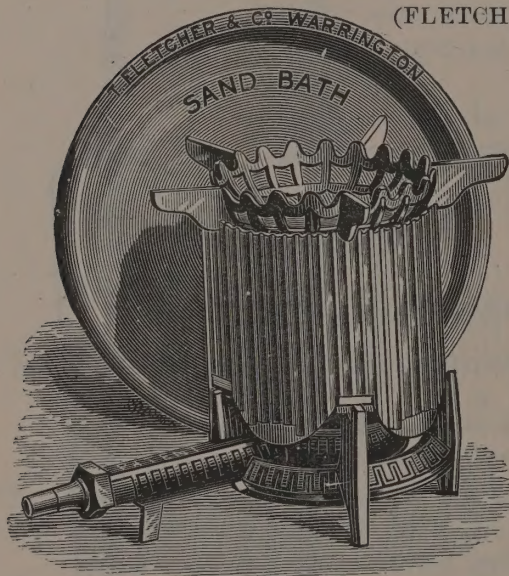


No. 10.	Diameter across support for vessels,	5½ in.	each	s. d.
" 15.	" " " " "	7 "	"	1 10
" 20.	" " " " "	8 "	"	2 3
				3 3

The numbers give approximately the maximum gas consumption at day pressure of gas equal $\frac{1}{16}$, and also the number of quarts of water they will boil in one hour in a light, broad-bottomed copper vessel.

LABORATORY BURNERS.

(FLETCHER, RUSSELL & CO.'S.)



Size No. 10. Height adjustable from 6½ to 7½ in. Support for flasks 4½ in. diameter, 1½ in. deep, and for flat vessels, 6½ in. diameter.

Size No. 15. Height adjustable from 7 to 8 in. Support for flasks 5½ in. diameter, 1½ in. deep, and for flat vessels, 7½ in. diameter.

These Burners supersede the well-known Low Temperature Burners. They will stand hard wear, and are equally useful for warming pieces, drying flasks, etc., evaporating, boiling, and general purposes. By employing a sand bath, glass and porcelain vessels can be heated without fear of breakage. The cylinder, as will be seen from the illustration, rests on the frame of the burner, and can be removed when the burner is wanted for boiling water, etc.

No. 10 Burner,	consuming from 1½ to 10 feet of gas per hour	each	s. d.
" 15 "	" 2 " 15 "	"	4 0
Sand Bath for No. 10—	9 in. diameter, 1 in. deep	"	5 0
" "	15—10 " 1 "	"	1 2
			1 6

BUNSEN BURNER.

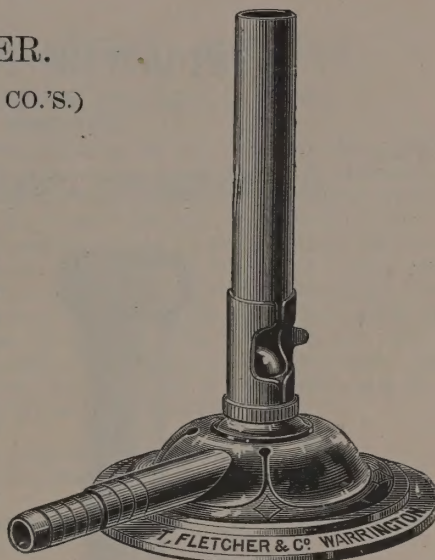
(FLETCHER, RUSSELL & CO.'S.)

FOR MODELLING AND FOR
GENERAL PURPOSES.

These are the ordinary brass tube Bunsen. They are correctly proportioned in every detail, and of the full theoretical power, working up to their maximum calculated duty in every case. All are screwed for $\frac{3}{8}$ -in. connection.

The number gives the maximum gas consumption in cubic feet per hour at $\frac{1}{10}$ pressure.

All have air tubes; these enable the smaller sizes to be used with a blowpipe without the necessity of a loose internal tube.



	Number	3.	5.	6.	8.	12.
Size of Tube outside . . .		$\frac{3}{8}$ in.	$\frac{7}{16}$ in.	$\frac{1}{2}$ in.	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.
Height, without Stand . . .		$3\frac{1}{2}$ in.	$4\frac{1}{4}$ in.	5 in.	6 in.	7 in.
		s. d.	s. d.	s. d.	s. d.	s. d.
PRICE, without Stand . . .		0 7	0 9	0 10	1 0	1 6
„ on Brass „ . . .		2 0	2 2	2 4	3 0	4 0
„ „ „ with Tap . . .		3 0	3 2	3 4	4 0	5 0

Heavy round brass stands only are supplied. The objectionable nature of iron stands on a laboratory table is too well known to need any remark. The stand increases the total height about one inch. They can be supplied in clusters of 3, 4, 7 or 12 burners, or mounted on tubes in any form.

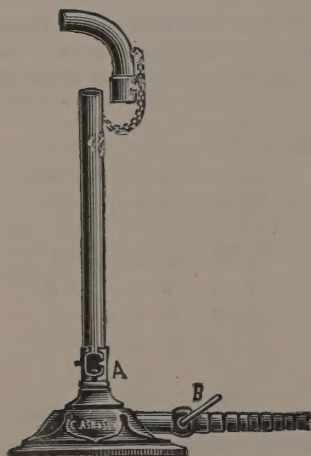
BUNSEN BURNER.

(FLETCHER'S No. 5 SIZE.)

For modelling and for general purposes, consuming about 5 cubic feet of gas per hour.

It is supplied with a bent detachable tube to prevent the drip falling on the flame when the burner is used for softening wax, or any other easily melted material.

By closing the sliding cap A, an illuminating flame can be obtained.

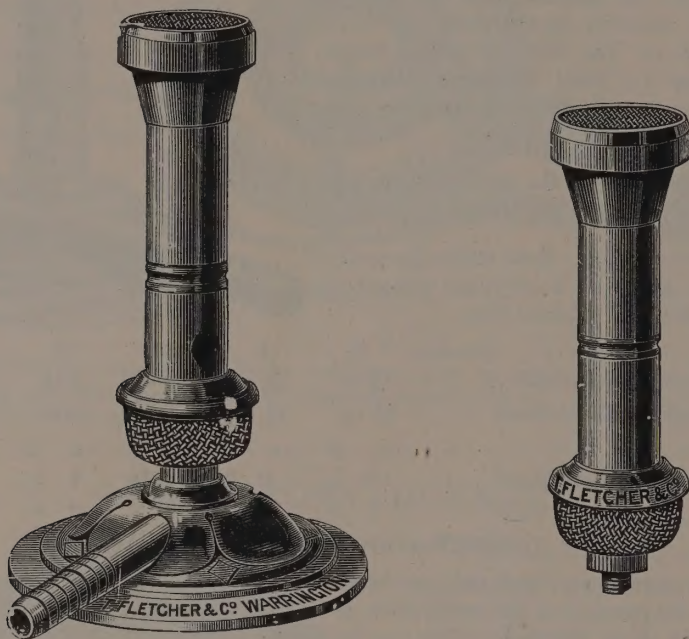


	s. d.
PRICE, on Brass Stand, with Bent Tube . . .	4 0
„ „ „ „ and Tap B . . .	5 0

IMPROVED SAFETY BUNSEN.

(FLETCHER, RUSSELL & Co.'s.)

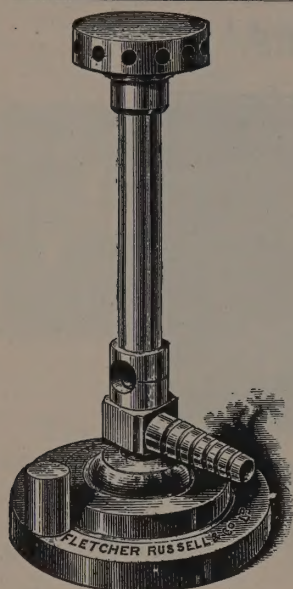
FOR MODELLING, ANNEALING, AND OTHER PURPOSES.



These will be found as perfect as any upright burner can possibly be made, of the highest possible power for the size—can be turned down to the merest flicker without lighting back, and can be mounted on tubes in any form or number when very high powers are required. They are made in three sizes, all in brass polished. The number gives the maximum gas consumption in cubic feet per hour at $\frac{1}{10}$ pressure. These Burners can be supplied in clusters of any number, or mounted on tubes, any shape, and with or without taps, to order.

	Number	5.	10.	14.
Diameter across top of gauze		$\frac{7}{8}$ in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.
Height, without Stand		$3\frac{3}{4}$ in.	$4\frac{1}{2}$ in.	6 in.
		s. d.	s. d.	s. d.
PRICE, without Stand		1 9	2 3	3 0
„ on Brass „		3 6	4 6	5 9
„ „ „ with Tap		4 6	5 6	6 9

If placed a number together, on a tube or ring, they must be at least one-fourth the diameter of the top apart. The stand increases the total height about one inch.



LABORATORY BUNSEN.

(FLETCHER, RUSSELL & CO.'S.)

Messrs. Fletcher, Russell & Co. say: "We have frequently been asked to make a correctly adjusted Bunsen for laboratory use, but have declined, owing to the very low price at which the common foreign burners are made. As we have, however, established a private demand for these burners, we have decided to put them on our list for the future. They are substantially made, correctly adjusted, the screws are English Standard threads, and the stand is formed with a carrier to hold the rose when not in use, so as to prevent its loss, which usually happens with the ordinary make. The roses are solid cored castings, not made out of thin parts stuck together, as is usual in the cheaper makes."

Height with rose as engraved, $5\frac{1}{2}$ inches.

Gas consumption, at $\frac{1}{10}$, 4 feet per hour.

	s.	d.
PRICE of Bunsen without rose	1	9
Rose extra	0	7

STANDARD ROSE BUNSEN.

(FLETCHER, RUSSELL & CO.'S.)

Drip-proof, Rustless, and the most powerful Burners ever designed in proportion to their size.

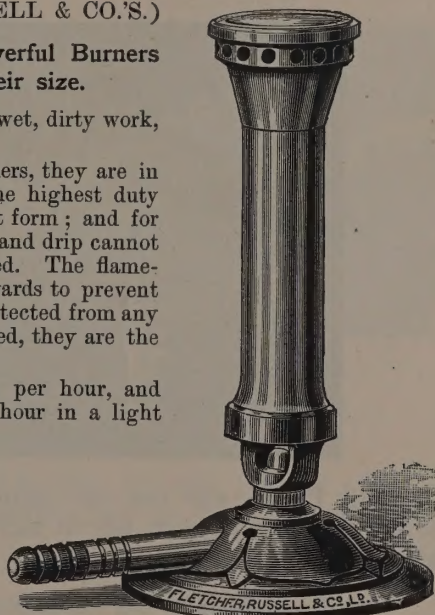
These Burners are specially designed for wet, dirty work, and are proof against drip, wet, and dust.

Like all the series of the Standard Burners, they are in every detail correctly proportioned, giving the highest duty with the simplest, cheapest, and most perfect form; and for their special work—where dirt, boiling over, and drip cannot be avoided—they leave nothing to be desired. The flame-holes are protected by a rim, and slope downwards to prevent wet running into the burner, the gas jet is protected from any falling dirt, and for their size, as already stated, they are the most powerful burners ever made.

The number gives the gas consumption per hour, and approximately the quarts of water boiled per hour in a light broad-bottomed copper vessel.

The correct distance between the top of the burner and the bottom of the vessel to obtain the best duty is $\frac{1}{2}$ in.

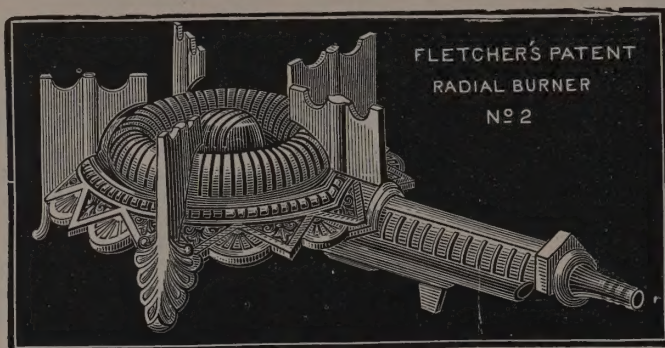
The Burners are made of fine brass in one single casting, and can be adjusted to any quality of gas to order without extra charge.



No.	Height.	Diameter.	Diameter of Flame.	Price	Price with	Price with
				without Stand.	Brass Stand	Stand & Tap.
				s. d.	s. d.	s. d.
5	5 in.	1 in.	$2\frac{1}{2}$ in.	1 9	4 0	4 9
10	6 in.	$1\frac{1}{2}$ in.	3 in.	2 6	4 9	5 6
15	7 in.	$1\frac{3}{4}$ in.	4 in.	3 6	6 3	7 0

Clusters of any number of Burners for special work can be supplied of any required power.

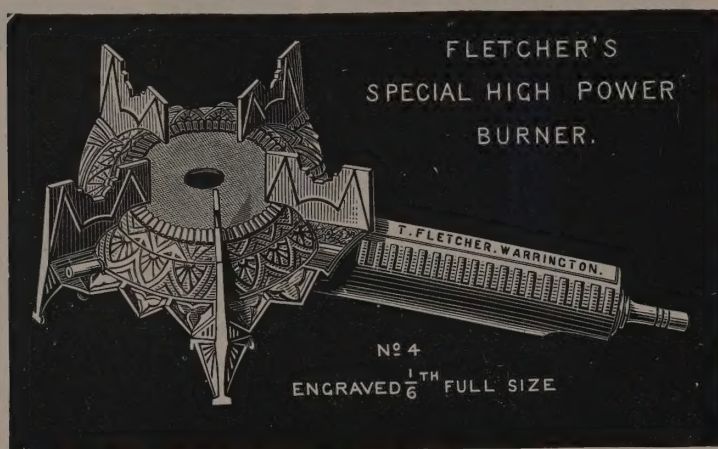
RADIAL GAS-BURNERS.



Gas consumption, small size, 12 feet; large size, 20 feet per hour.

		s.	d.
Radial Burner, as illustrated	small size	4	6
„ „	large „	6	6

HIGH-POWER GAS-BURNERS.



This Burner will boil one gallon of water, in a flat copper vessel, in seven minutes, or from ten to thirteen gallons per hour. Made in two sizes as under :—

	Size across the gauze.	Gas consumption per hour.	Size of pipe required.	s. d.		With pure nickel gauze.	
				s.	d.	s.	d.
No. 3.	2 $\frac{3}{4}$ in. diameter	25 cubic feet	$\frac{3}{8}$ in. clear bore	6	0	8	0
„ 4.	4 „	40 „	$\frac{1}{2}$ „	8	0	11	0
„ 3,	without tripod			4	0	6	0
„ 4,	„ „			6	3	9	3

No. 4 is shown in the engraving.

ARGAND BUNSEN GAS-BURNERS.

FIG. 200.

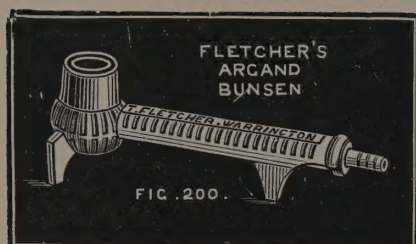
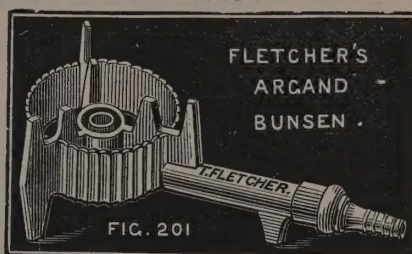


FIG. 201.



Gas consumption, either from $\frac{1}{2}$ -inch size, $3\frac{1}{2}$ feet per hour.

" " $\frac{3}{4}$ -inch " 7 " "

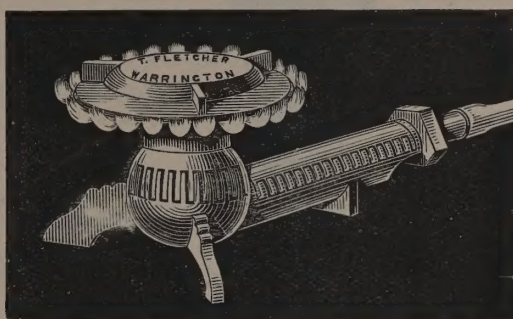
The sizes given are the bore of the horizontal tube. They will be found very useful for modelling and for small general work.

		s.	d.		s.	d.
Burner, without tripod (Fig. 200), small size	. .	2	3	large	2	9
" with " (" 201), "	. .	3	0	"	3	9

DRIP-PROOF STAR BURNER.

(FLETCHER, RUSSELL & CO.'S.)

Specially designed for wet and dirty work. It will burn steadily with any gas-supply from 2 to 14 feet per hour, and is small enough to pass through an opening 3 inches high by $4\frac{1}{2}$ inches wide.



	s.	d.
PRICE, size 5	2	6

PURE NICKEL GAUZES,

FOR HIGH-POWER AND OTHER BURNERS.

This is almost infusible and indestructible, and will last for years in continual hard daily use. It is practically equal to Platinum at about one-tenth the cost.

		each	s.	d.
For No. 5 Safety Bunsen Burner	.	.	0	3
" 10 " "	"	"	0	4
" 14 " "	"	"	0	5
" 3 High-power	"	"	2	0
" 4 "	"	"	3	0
" 6 "	"	"	4	6
" 8 "	"	"	8	0

PERFECT ATMOSPHERIC BURNER.

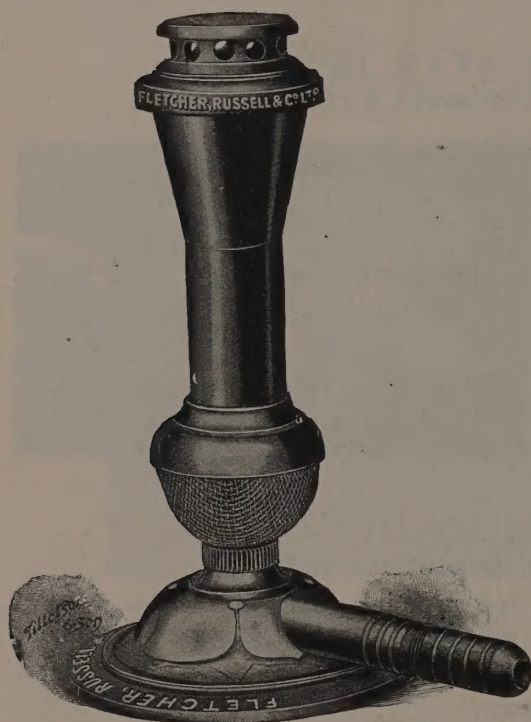
1898 PATENT.

(MESSRS. FLETCHER, RUSSELL & CO.'S.)

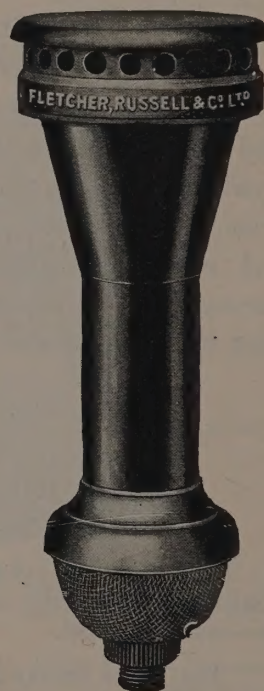
The Inventors say :

" This new atmospheric burner is the result of over 20 years' constant experimenting. As the makers of the **FIRST** atmospheric burner on really scientific principles, and the **FIRST** to construct these for high powers, and the **FIRST** to make them in single casting without joints liable to leakage, their improvement has been a constant object, and we may safely claim that **EVERY** really good atmospheric burner made is on the lines laid down by Mr. Fletcher in his communication on the laws ruling their construction, communicated to the Gas Institute in 1883.

" The New Perfect Burner is a further application of these laws, and we believe that this will prove the **FINAL** development and the future standard."

PERFECT SAFETY BUNSEN BURNERS.

No. 6.—Half size.

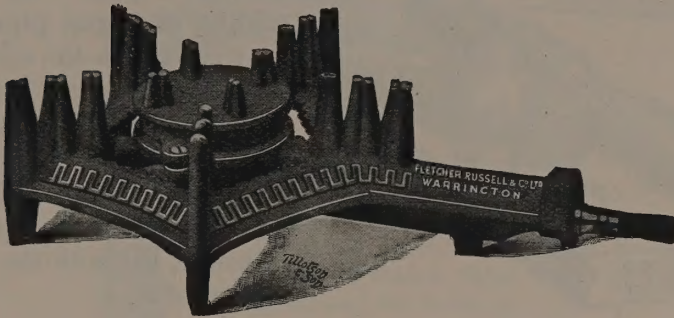


No. 12.—Half size.

Brass.		Gas Consumption per hour.	Price without Stand.		Price with Stand.	
			s.	d.	s.	d.
No. 6 P.S.B	.	6 cubic feet	3	6	5	9
„ 12 „	.	12 „	5	0	7	9

PERFECT BOILING BURNERS.

(FLETCHER, RUSSELL & CO.'S.)



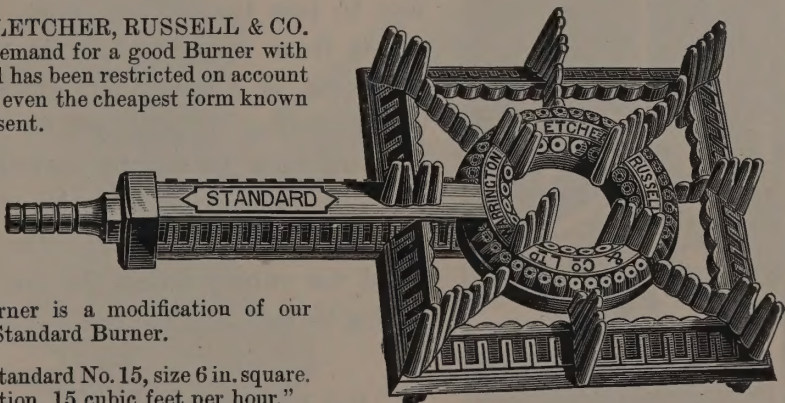
		Diameter across Support for Vessels.	Gas Consumption per hour.	Price, as engraved.	
				s.	d.
No.	6 P.B.	5½ in.	6 cubic feet	2	6
„	10 P.B.	6 in.	10 „	2	9
„	14 P.B.	7 in.	14 „	3	0
„	18 P.B.	8 in.	18 „	4	0

The patterns in which the new burner is made are shown above and on the preceding page.

SQUARE STANDARD BURNER.

(FLETCHER, RUSSELL & CO.'S.)

MESSRS. FLETCHER, RUSSELL & CO. say : “ The demand for a good Burner with a square stand has been restricted on account of the cost of even the cheapest form known up to the present.



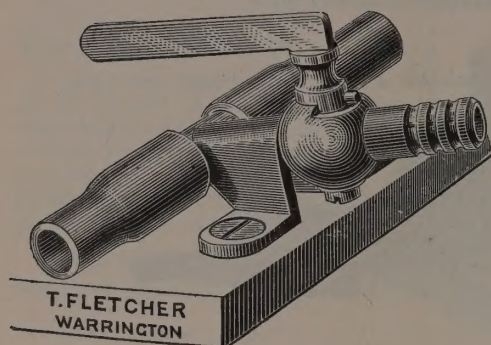
“ This Burner is a modification of our well-known Standard Burner.

“ Square Standard No. 15, size 6 in. square. Gas consumption, 15 cubic feet per hour.”

PRICE 3 0

GAS SUPPLY TAPS.

FIG. 112.



This pattern is for obtaining a supply out of the middle of a gas pipe without interfering with the other lights. To fix this, cut about three inches out of the lead pipe with a sharp knife, and connect the cross tube with short bits of India-rubber tube so as to make up the pipe as before, but with the tap leading out of it.

PRICE, 3-inch size (Fig. 112)	each	s.	d.
		2	0

FIG. 114

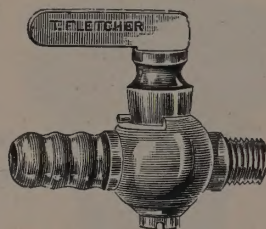
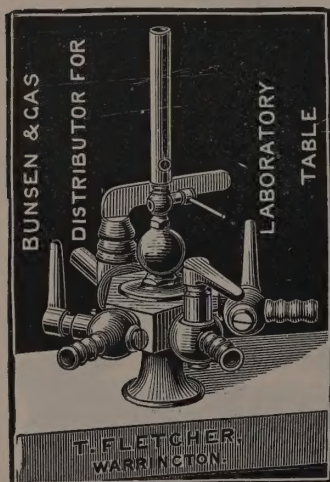


Fig. 114—For fixing by a gas-fitter. s. d.

PRICE, $\frac{3}{8}$ -inch size, brass gas . each 1 0

2 5 2 0

GAS DISTRIBUTOR FOR LABORATORY TABLES.



Consisting of a brass pillar, with screwed pipe to pass through the table, taking its supply from underneath. On the top of the pillar is a small jet, which may be either used as a pilot jet for keeping a constant light, or can be converted into a small Bunsen by slipping the tube on, as shown in the engraving. The taps are fitted for rubber tubes, the one engraved having three $\frac{3}{8}$ taps and one $\frac{1}{2}$ inch.

	<i>s.</i>	<i>d.</i>
Gas Distributor . . .	12	6

Other Forms of Gas Taps supplied to order.

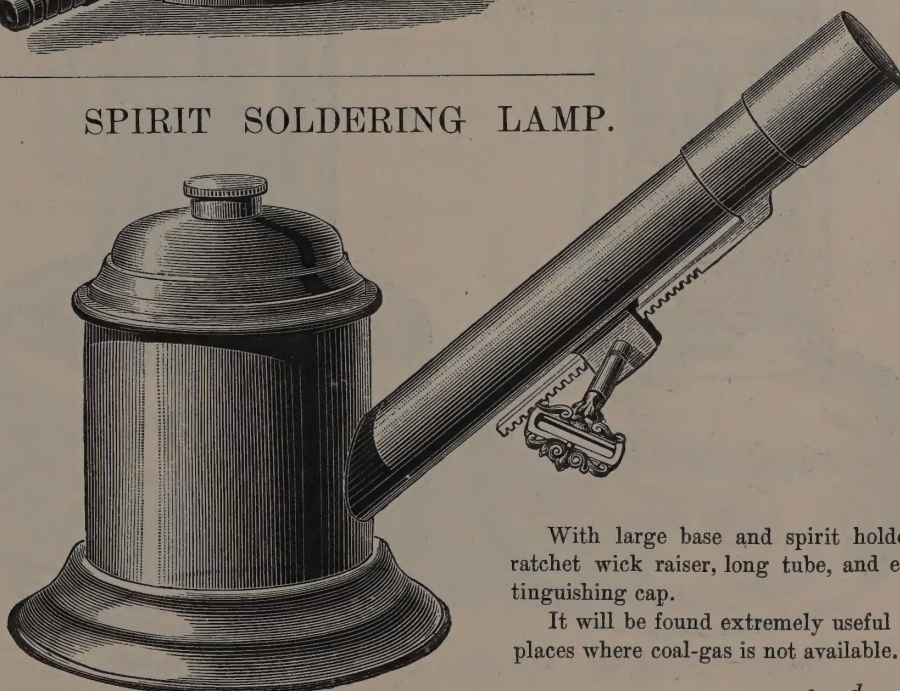
WATTS' COMBINED BUNSEN AND BLOWPIPE BURNER.



This is a most useful burner for blowpipe work ; the bent arm prevents the possibility of small articles or *débris* being dropped down the tube, and the V-shaped slit at end forms a rest for the blowpipe nozzle. A Bunsen flame can be instantly obtained by opening the shutter A.

PRICE, as illustrated . . .	s.	d.
	4	6

SPIRIT SOLDERING LAMP.

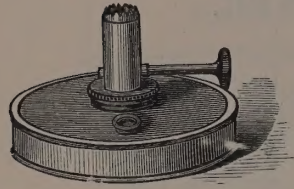


With large base and spirit holder, ratchet wick raiser, long tube, and extinguishing cap.

It will be found extremely useful in places where coal-gas is not available.

PRICE, as illustrated	s.	d.
	7	6

TIN SPIRIT LAMP.



4 in. high by 6 in. diameter.

With regulating wick-holder, suitable for heating Vulcanizers, and for soldering, etc.

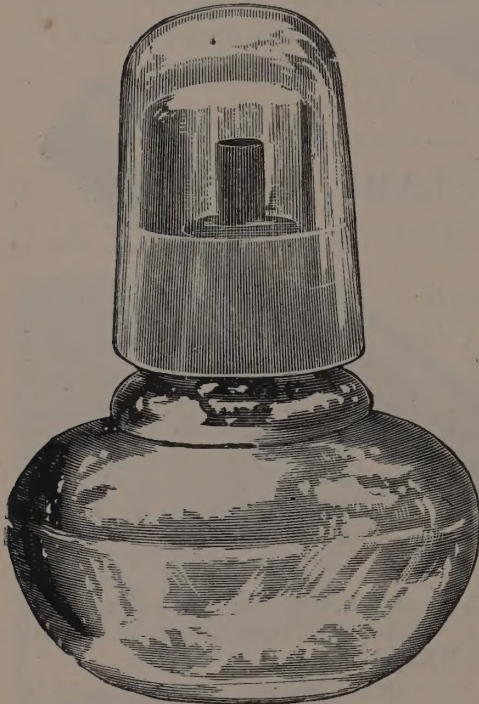
	s.	d.
PRICE, best make	6	0

Tin Spirit Lamp, deeper than the above, suitable for heating Glass Flasks containing ammonia, etc., and for soldering, etc.

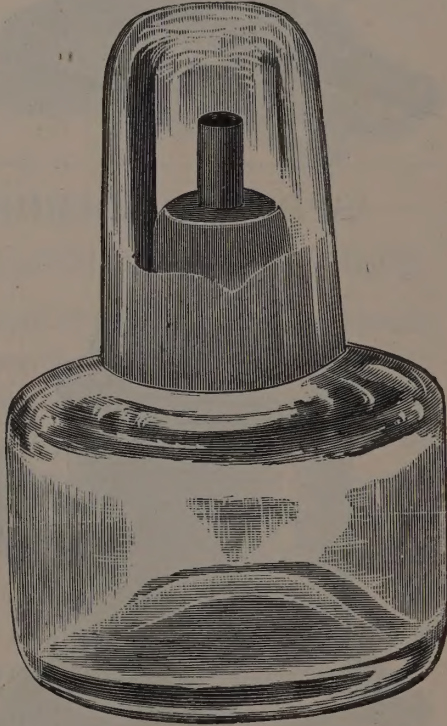
	s.	d.
PRICE, best make	6	0

GLASS SPIRIT LAMPS WITH CAPS.

FOR MODELLING AND FOR GENERAL PURPOSES.



Shallow—4 inches high.



Deep—4 inches high.

	s.	d.
PRICE, either kind	each	1 6

IMPROVED GAS SOLDERING LAMP.

(MR. OWEN'S.)

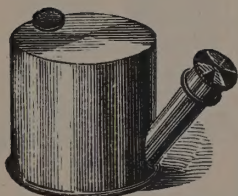
Useful also for modelling, etc. ; has a fine tube at the side, so that the flame may be turned down to a small jet, in order to save the gas at intervals when the lamp is left for other work, etc. Height, 8 inches.



	s.	d.
PRICE	10	6

SPIRIT LAMP.

FOR SOLDERING, MODELLING, Etc.



Brass Spirit Lamp, with screw caps, for soldering, etc. It is substantially made and well finished, and will be found very useful when travelling, the screw caps serving effectually against waste of the spirit.

3½ in. high by 3 in. diameter.

	s.	d.
PRICE	7	6

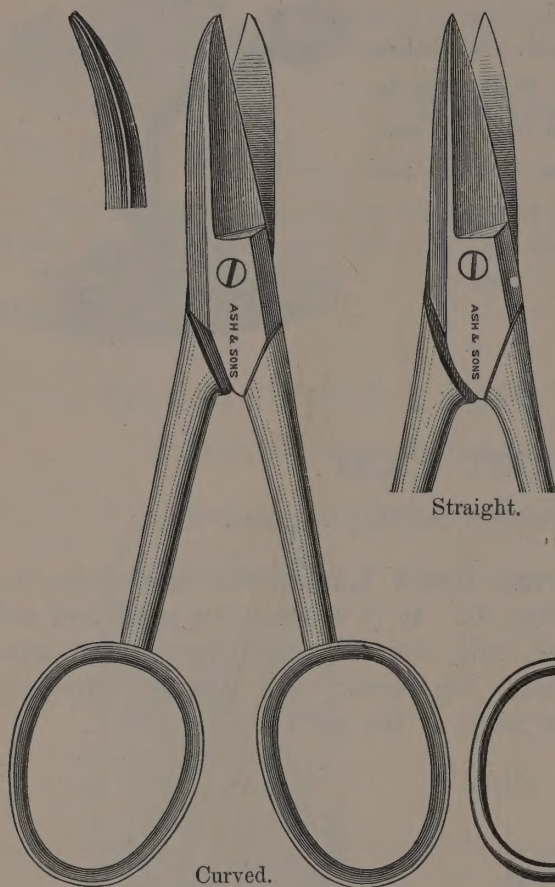
GLASS BORAX SLAB.



	s.	d.
Made of pure white glass, ground inside the cup part	1	0
Borax , in lumps per lb.	0	4

IMPROVED PLATE
SCISSORS.

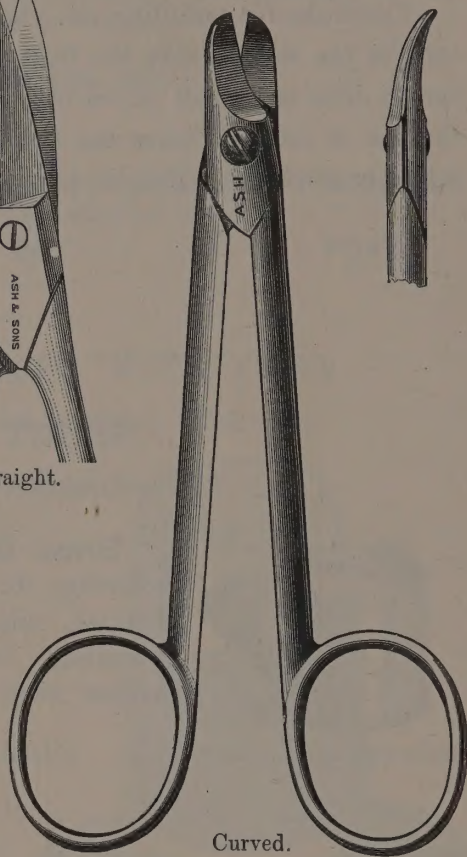
(MR. GIRDWOOD'S.)



FULL SIZE.

CROWN AND COLLAR
SCISSORS.

(DR. J. H. BEEBEE'S.)

*Specially adapted for the use of Crown and Bridge Workers.*

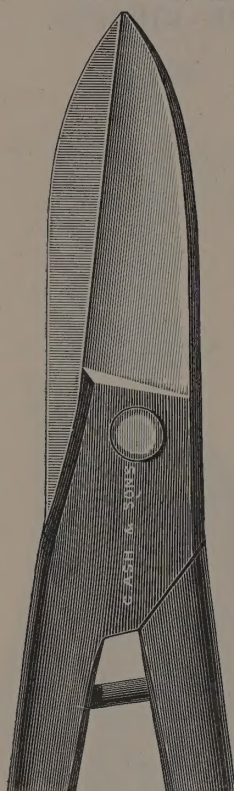
Improved Plate Scissors (Mr. Girdwood's).—These Scissors are more easily handled than small shears, and allow of sharp curves and angles to be readily cut, and Mr. Girdwood finds them plenty strong enough for crown gold, etc.

Curved Scissors, Nickel-plated	each	s. d. 4 0
Straight „ „	„	2 6

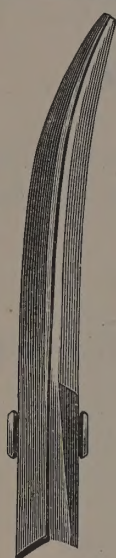
Crown and Collar Scissors (Dr. J. H. Beebee's).—Most useful for cutting and trimming gold collars and crowns.

PRICE, Nickel-plated	s. d. 4 6
--------------------------------	--------------

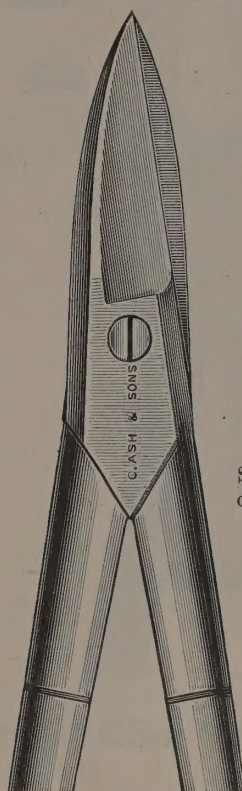
PLATE SHEARS. FOR GENERAL WORK. FOR CROWN WORK.



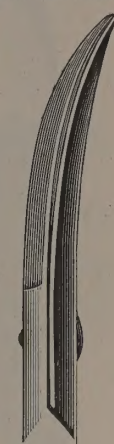
Left Side.



Side View
of Curved
Blades.



Right Side.

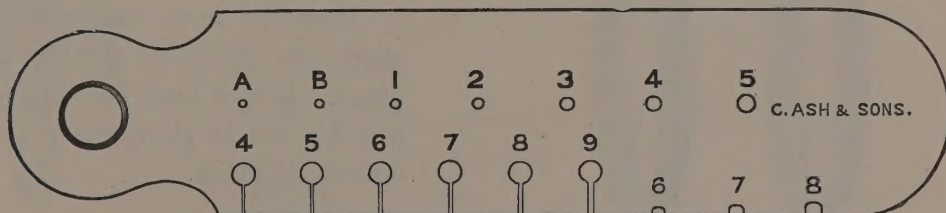


Side View
of Curved
Blades.

The Shears for general work (Stubs' manufacture) are made in right and left sides in two sizes—7 inches and 8 inches long. The Shears for Crown work have fine blades and light handles. They are only made in one size as illustrated—7 inches long.

		7-inch.		8-inch.	
		s.	d.	s.	d.
Plate Shears for general work,	straight	each	4 0	4 6	
"	curved	"	4 6	5 0	
Plate Shears for Crown work,	straight, Nickel-plated	"	2 6	—	
"	curved,	"	2 6	—	

ASH'S PLATE AND WIRE GAUGE.



A, B, 1, 2, 3, 4, 5 show our round wire sizes ; Nos. 6, 7, 8 our half-round wire sizes ; Nos. 4, 5, 6, 7, 8, 9 on the lower part of the Gauge show our plate sizes.

PRICE of Gauge, as illustrated, in polished steel 7 6

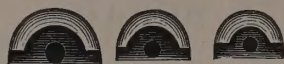
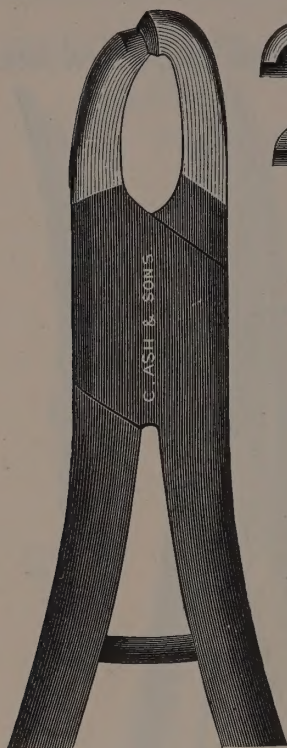


PLATE CUTTERS OR NIPPERS.

(STUBS'.)

With round noses, large, medium, and small, s. d.
as illustrated, 6 in. long . . . each 5 0

ROUND-NOSE NIPPERS.

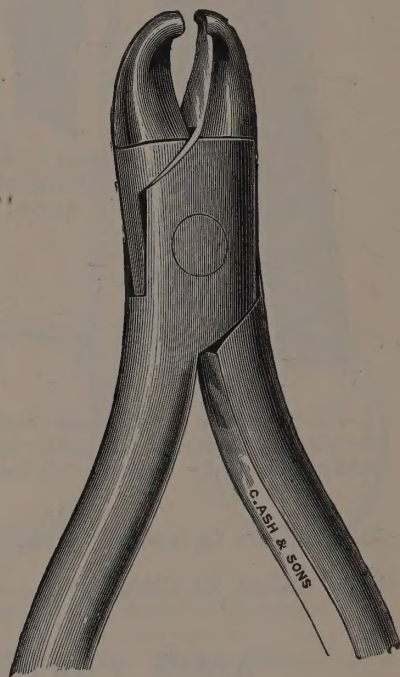
PLATE BENDERS.

(Upper.)

(Lower.)



Plate Benders, $7\frac{1}{4}$ inches s. d.
long . . . each 5 6

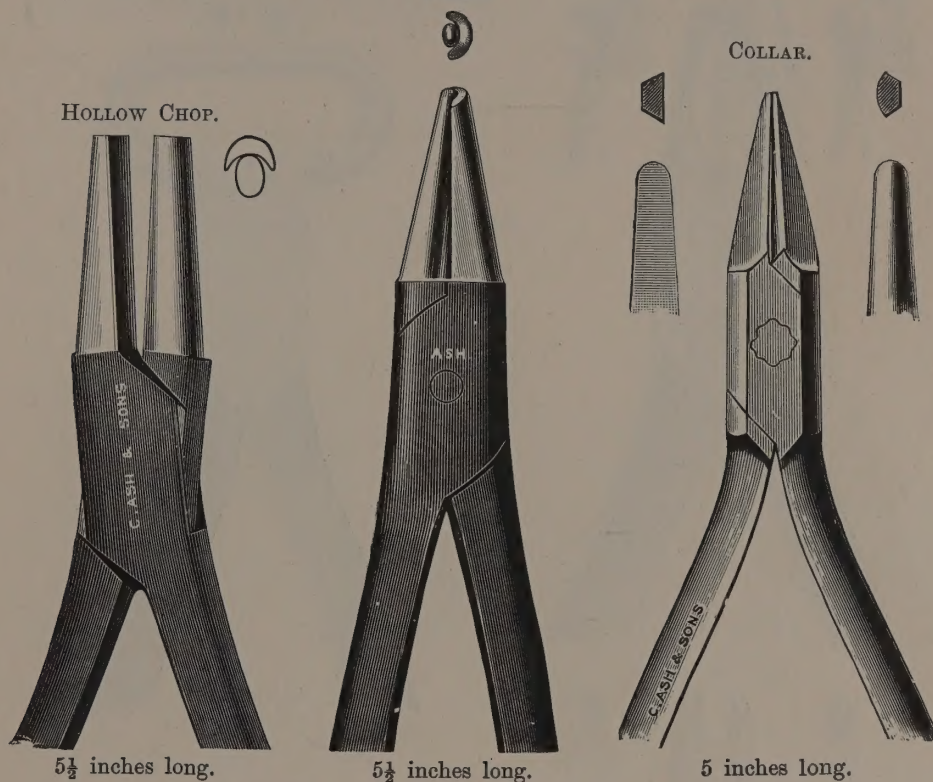


Improved form with curved
chops, for cutting off pins inside
plates. It is a most convenient
tool for use in places which are
difficult of access.

Round - Nose Nippers, s. d.
 $5\frac{1}{2}$ inches long . . . 4 6

PLIERS (VARIOUS).

PLATE.



CLASP BENDERS.



7 inches long.

Hollow-Chop Pliers, with one oval and one hollow chop, for bending clasps, making collars, bands, etc. . . . each 2 6

Plate Pliers, with oval and hollow chops for bending clasps, etc. This has been suggested to us as an improved form of pliers for the work in question, and we think it will be liked on account of its lightness each 3 0

Collar Pliers, with flat and rounded chops in bright polished steel each 2 0
Ditto ditto Nickel-plated „ 3 0

Clasp Benders, with one oval and one hollow chop each 5 6

CONTOURING PLIERS.

FIG. 1.

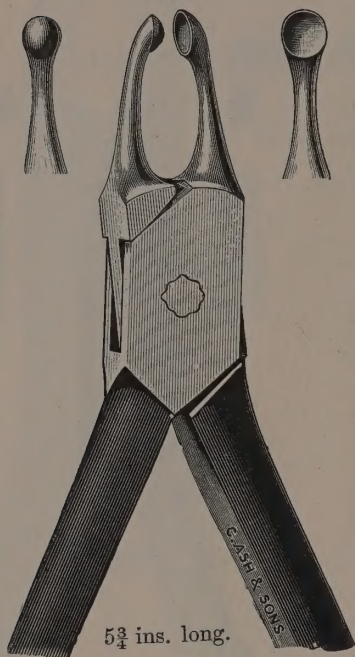


FIG. 2.

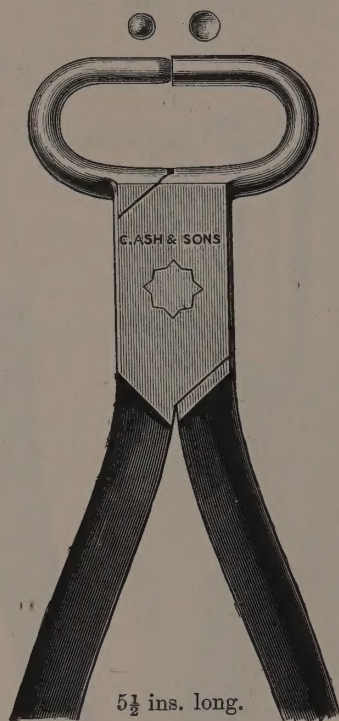


FIG. 3.

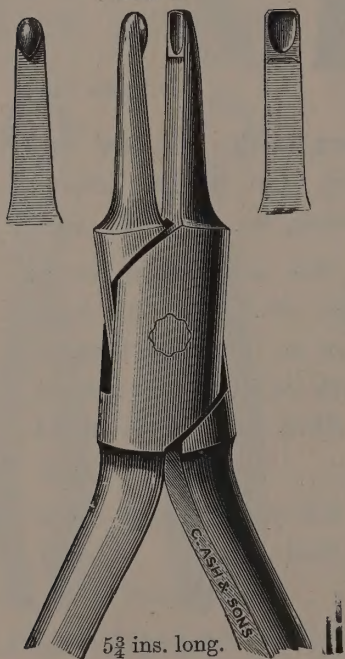
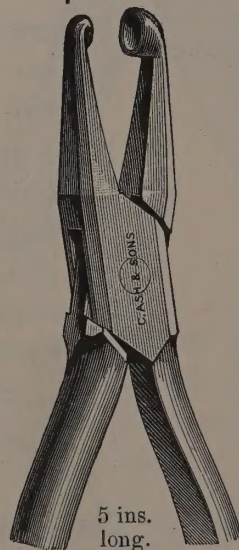


FIG. 4.



Contouring Pliers (Dr. J. J. R. Patrick's), Nickel-plated . . . (Figs. 1, 2) each
 " " (Dr. W. Mitchell's), Nickel-plated . . . (" 3, 4) " .

s. d.
 6 6
 6 6

CONTOURING PLIERS.

(MR. W. F. FLOTE'S.)

(REGISTERED. REG. No. 407,252.)

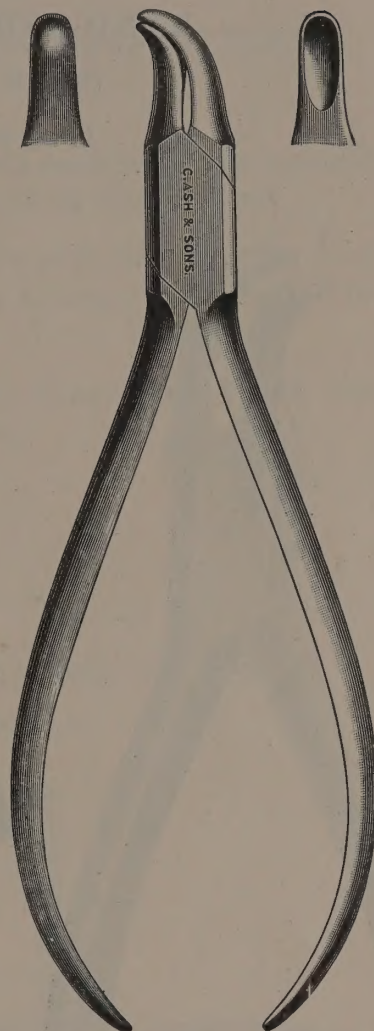
Mr. Flote has designed these Pliers for—

(1) Contouring the buccal surface of all-gold crowns.

(2) Reproducing the contour of natural teeth in metal, the jaws being so formed as to prevent kinking the metal.

(3) Forming concave surfaces on bands for dentures. With careful manipulation they are most excellent for this purpose.

PRICE, Nickel-plated . . . s. d.
5 6



Full size.

ASH'S ARTICULATING PAPER.

		s.	d.
Black, in broad strips	per doz. books	1	6
„ „ narrow „	„	1	0
Blue, „ broad „	„	1	6
„ „ narrow „	„	1	0
M		E	2

BAND CONTOURING PLIERS.

(MR. W. E. FLETCHER'S.)

(REGISTERED. REG. NO. 478,322.)

FIG. 1.

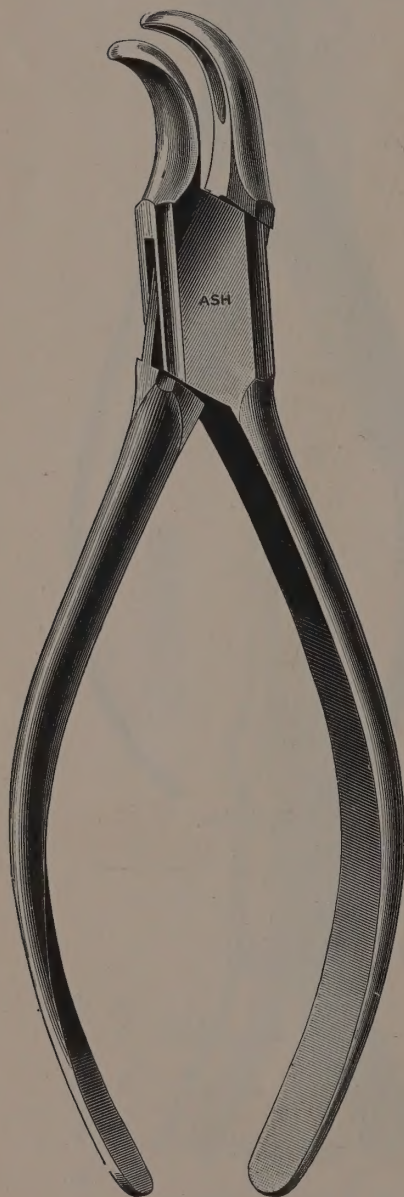


FIG. 2.

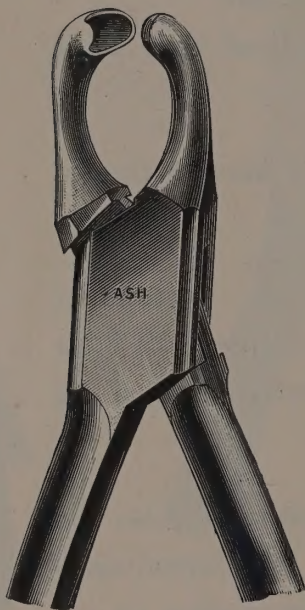
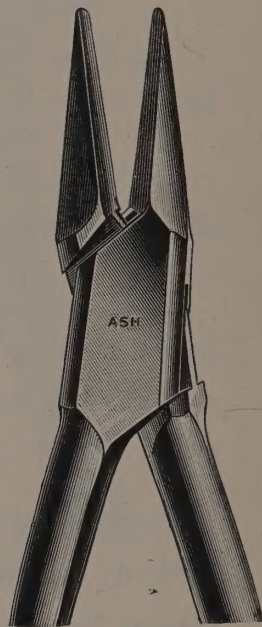
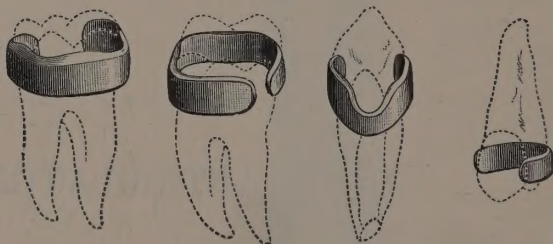


FIG. 3.

**BANDS FORMED WITH THE PLIERS.**

After lengthened trial Mr. W. E. FLETCHER finds the three Pliers here illustrated in every way suited for their purpose.

They are powerful enough for bending any thickness of band gold up to Ash's size 9.

FLETCHER'S BAND CONTOURING PLIERS—

continued.

Fig. 1 is particularly useful for contouring bands lengthwise, especially complete bands for Bicuspids and partial bands for Molars.

Fig. 2, in conjunction with Fig. 1, is intended for contouring bands for very bulbous Molars in such a way as to secure the "grip" in the right part.

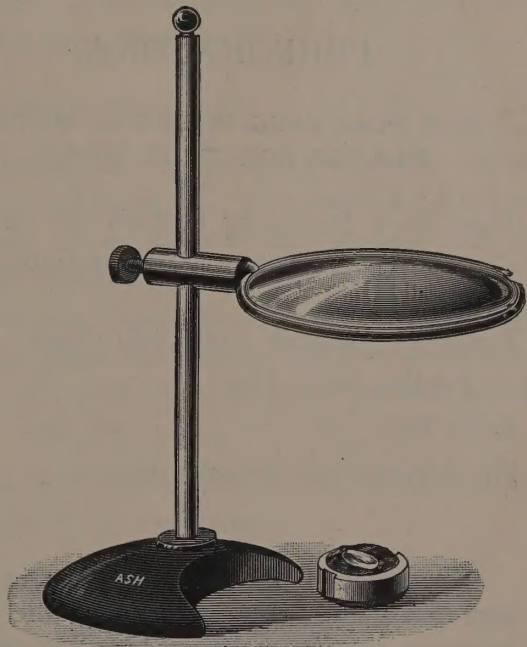
Fig. 3 is for contouring plain bands. It is more strongly built than the usual contouring Pliers of the same form.

		s.	d.
Figs. 1 and 2, Nickel-plated		each	7 6
Fig. 3,	„	„	5 0

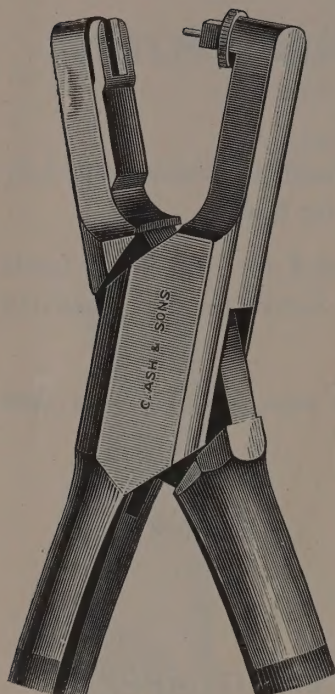
ADJUSTABLE EXAMINING GLASS.

FOR INLAY WORK, Etc.

The crescent-shaped base on which the pillar is mounted admits of the inlay or other object being placed in any part of the field of view, and the glass can be raised or lowered on the pillar to any extent to suit the sight of the Operator.



PRICE, as illustrated . s. d.
4 6



6½ inches long.

**PIN NIPPERS.****FOR PUNCHING HOLES IN METAL BACKINGS FOR FLAT TEETH.**

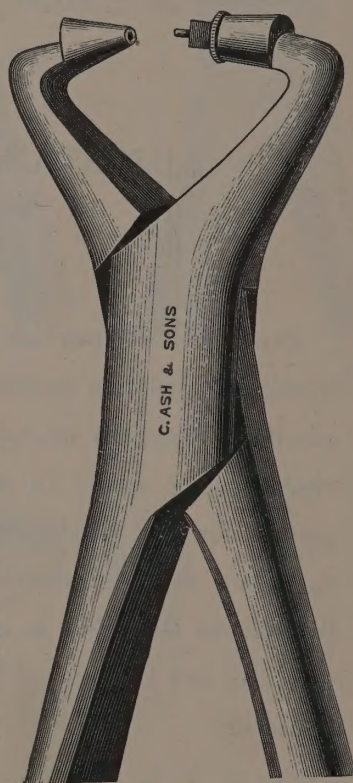
The Chop in which the pin is fixed is so arranged that the cutting pins can be renewed as often as necessary. This is accomplished by merely unscrewing the movable pin-holder *A*, and dropping in the pin from the back. The pins are flattened at one end, to prevent them turning round or falling through, and when the pin-holder *A* is screwed home in the head of the Nippers the pin is perfectly secure.

	s.	d.
PRICE, Nickel-plated, including 6 Pins	5	6
Extra Pins per doz.	1	0
Pin-Holder <i>A</i> , extra, for renewing	1	6

PERFORATORS.**FOR PUNCHING HOLES IN METAL PLATES FOR TUBE WORK.**

There is a flat spring between the handles which is not shown in the illustration.

PRICE, in polished steel with black	s.	d.
handles and 6 Pins	6	6
Extra Pins per doz.	1	0
Pin-Holder, extra, for renewing	1	6

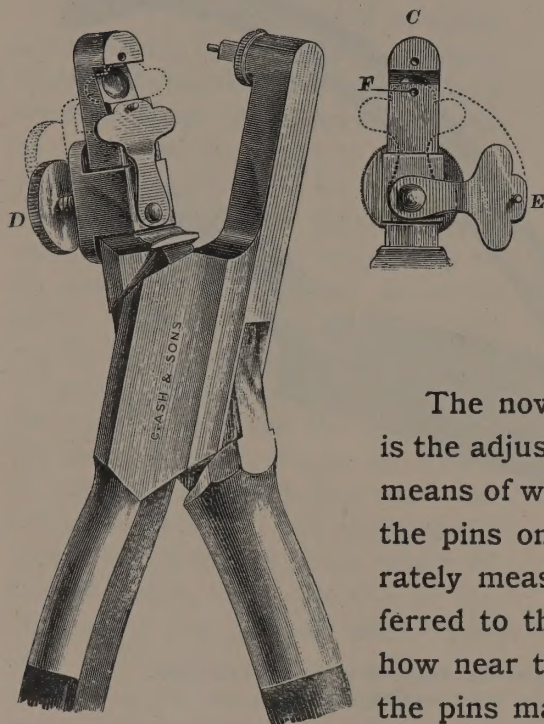


7½ inches long.

This tool is also supplied, at the same price, with pin-holder and pins the same size as in the Pin Nippers, for punching holes in metal backings for flat teeth.

PERFECTED PIN-HOLE NIPPERS.

FOR PUNCHING METAL BACKINGS FOR FLAT TEETH.



DESCRIPTION:

C—Adjustable sliding gauge with spring guide pin **E** and measuring hole **F**.

The illustration on the left-hand side shows the upper part of the tool, full size, with the adjustable sliding gauge in position and the set screw **D** by which it is controlled.

The novel feature about this tool is the adjustable sliding gauge **C**, by means of which the distance between the pins on the tooth can be accurately measured and faithfully transferred to the metal plate, no matter how near together or how far apart the pins may be.

DIRECTIONS FOR USE:

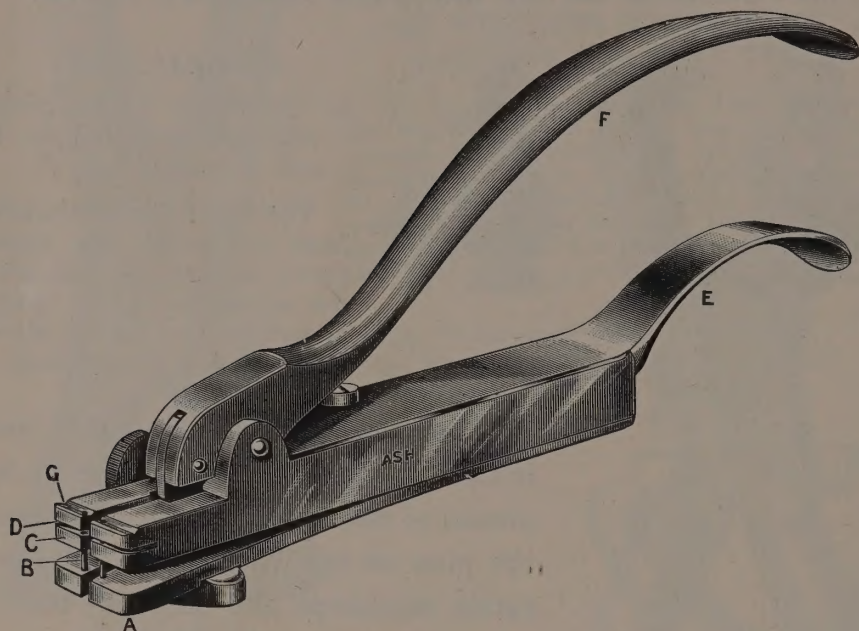
Lift the guide pin by the projections on the spring and turn it away from the beak, as shown in the illustration **C**. After punching the first hole in the metal backing, release the set screw **D**, take the tooth and fit one pin in the measuring hole **F**, and the other in the cutting hole in the head of the tool, holding it with the beaks while fixing the set screw. Then remove the tooth, push the guide pin back into the measuring hole place the hole already made in the plate over the guide pin, and punch the second hole.

The result will be that when the tooth is placed on the metal backing the pins will be found to fit exactly in the two holes.

	s.	d.
Perfected Pin-hole Nippers, complete with 6 Pins	9	0
Extra Pins per doz.	1	0

YOUNG'S ADJUSTABLE PERFORATORS.

FOR PUNCHING TWO HOLES AT ONCE.



- A—Screw which holds the back plate that clamps the pins.
 B—Pins.
 C—Intermediate Plate with holes that supports and stiffens the pins.
 D—Slotted recess into which the metal backing is placed.
 E—Lower Lever.
 F—Upper Lever.
 G—Groove in upper plate with holes into which the tooth to be backed is placed before punching the backing.

Mr. Young claims that his tool secures, rapidly and with mathematical precision, exact correspondence between the holes in the metal plate used for backing teeth, and the pins of the tooth to be backed. It provides also for the quick and easy disengagement of the plate from the perforating pins after punching. The difficulty of separating, without twisting or injuring the perforated plate (the greatest obstacle to punching two holes at once), is entirely removed.

The risk of fracture in backing teeth is reduced to a minimum.

No measuring is required. The tooth is its own gauge, virtually punching its own holes.

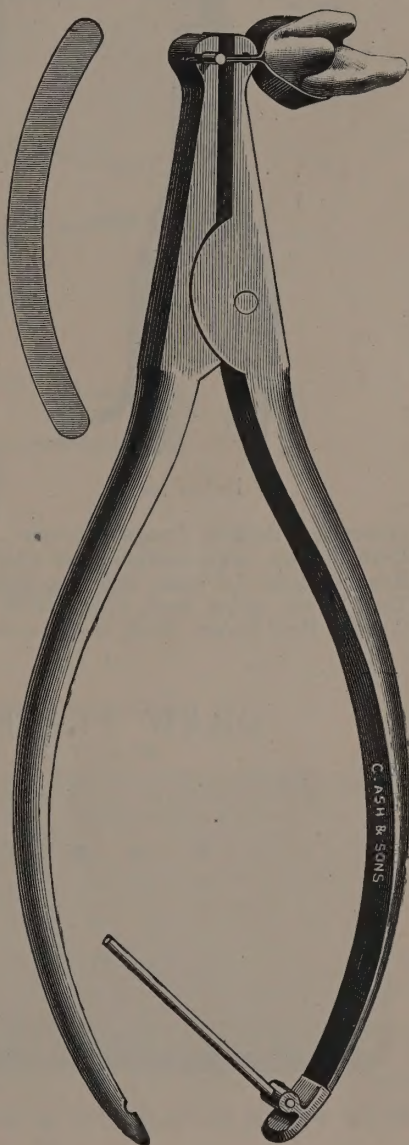
	s.	d.
PRICE	15	0
* „ with Set Screw	16	6
Either kind, Nickel-plated. extra	1	0
Extra Pins per doz.	2	0

* By means of the Set Screw the jaws can be locked at any desired point.

BAND-ADJUSTING PLIERS.

(MR. R. P. LENNOX'S.)

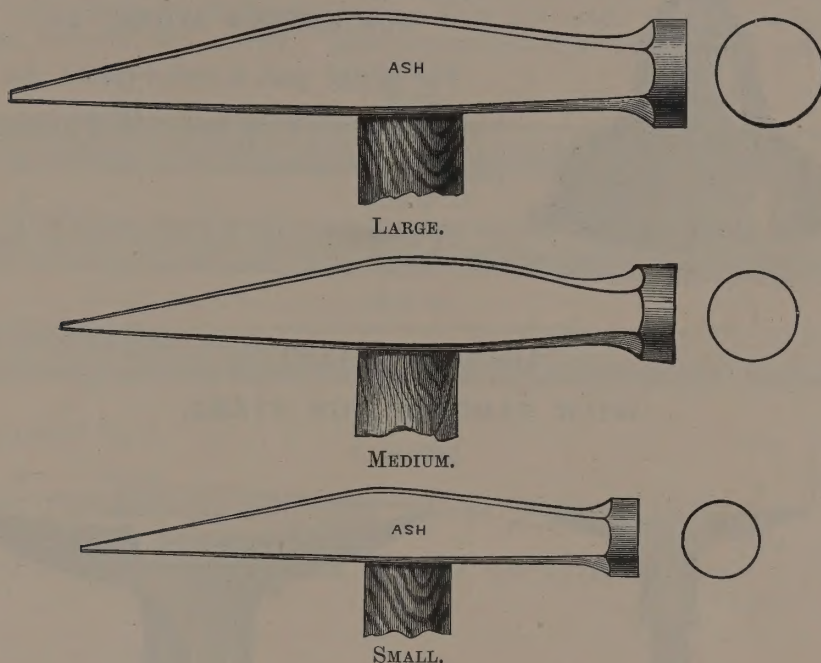
These Pliers are designed to adjust a copper strip to a root for the purpose of ascertaining the form and girth of the root at the gum margin. It will be seen that the chops of the Pliers open when the handles are closed, and that they have a slot, slightly deeper than the width of the copper strip to be used, cut across their thickened ends. A copper strip of the proper curved form, duly annealed and boiled, is bent into a loop so as to bring the two ends together, and the closed ends are passed into the slot in the Pliers, so that the extremities just reach the outer side of one of the chops, and a copper loop is formed at the outside of the other chop, the longer edge of the strip going first into the slot. The strip is secured in this position by pushing a pin into the hole in that chop which is farthest from the copper loop. So far the chops have been kept closed by a wire hinged at the extremity of the other handle. Things being in this position, the loop is slipped, shorter margin first, over the root to be crowned, the hinged wire is freed, and the handles are pressed together by the grasp of the hand. This opens the chops. That chop in which the strip is not fixed slides along the strip up to the root, thus closing the loop tightly about the root, and effecting the desired adjustment almost instantaneously.



Pliers complete with one dozen each Bands and Pins s. d.
7 6

RIVETING HAMMERS.

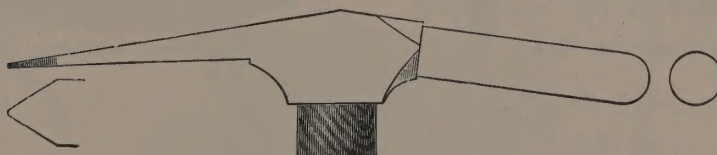
(STUBS'.)



Riveting Hammers, Large, Medium, or Small	each	s.	d.
Extra Handles for any size	„	0	4

RIVETING HAMMER.

DESIGNED BY MR. W. W. DYKES.



Mr. Dykes says: "This Hammer will be found useful in dishing bands to fit the contour of molars and bicuspsids, for touching up the cusps of gold crowns, putting a finish upon the heads of pins in riveting backs upon flat teeth, etc., etc.

"It was specially designed to ensure the easy and thorough cupping of the rubber discs—Hall's, Lord's, and others—in suction uppers, and for making a solid smooth head on the pin in the counter-sink. While in the act of riveting there is no danger with the rounded end of chipping or indenting the vulcanite or of injuring the washer which is used with Hall's disc."

PRICE complete with handle	s.	d.
	1	6

Hammers for striking-up plates supplied to order.



About half size.

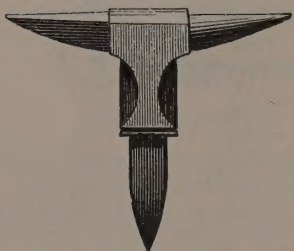
LIGHT ANVIL.

FOR CROWN WORK, Etc.

The bright part is nickel-plated and the base on which it is mounted is japanned black.

		s.	d.
PRICE		4	0

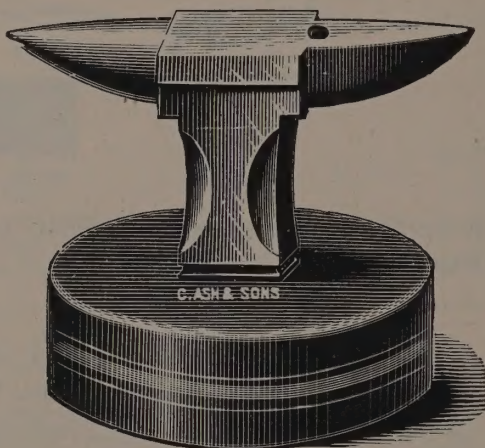
BEAK IRONS,
WITH TANG AND ON STAND.
(STUBS'.)



With Tang.

For Crown Work and for general use.

Supplied in one size, about $\frac{7}{8}$ inch across the face.



On Stand, half size.

		s.	d.
PRICE, with Tang		3	6
„ on Stand.		5	6

BOXES FOR METAL SCRAPS.

In Japanned Tin, Circular, with Sifters.

Made in three sizes	{	3 $\frac{1}{4}$ in. diameter, each	1	3
		4 in. „ „	1	9
		4 $\frac{1}{2}$ in. „ „	2	0

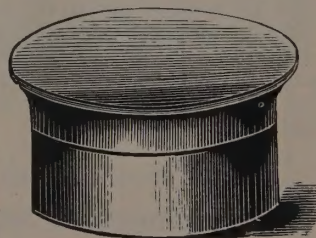


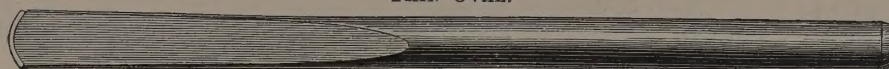
PLATE PUNCHES.

These Punches are used for forcing metal plates close to the necks of the teeth while on the metal casts. They are made in three widths—broad, medium, and narrow. The illustrations show the medium width.

FLAT.



THIN OVAL.

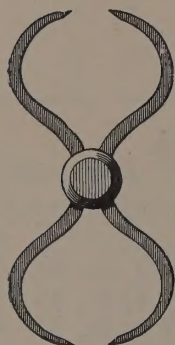


HOLLOW.

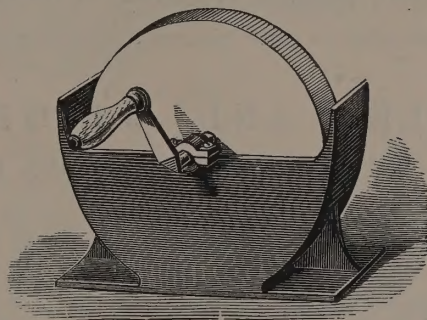


		s.	d.
In polished Steel	each	0	9
„ Brass	„	0	6
Steel Numbers for stamping Metal Plates			
	per set of nine	5	6
Steel Numbers or Letters, to order, per number or letter			
	from	0	6

CALLIPERS, GRINDSTONES, AND DIVIDERS.



CALLIPERS.



GRINDSTONE.



DIVIDERS.

		s.	d.
Callipers, bright Steel, for gauging plates, etc., 3½ ins. long	each	2	3
Dividers, spring Steel, with set screw, 4½ ins. long . . .	„	3	0
Grindstones, for Hand, in Trough, 6 to 12 ins. diameter, from		5	6
„ for Lathes, about 3 ins. diameter . . .	each	1	6

Other Grindstones supplied to order.

SPIRAL BRUSH.

FOR CLEANING BANDS, CLASPS, WIRES, Etc.

(Suggested by MR. P. H. HAYES PALMER, L.D.S. Eng.)

Mr. Hayes Palmer says :

“This Spiral Brush is intended to remove the unpleasant deposits found on the inner side of bands, clasps, or wires, used in the retention of artificial teeth, more especially the variety used around bicuspid and small molars, where the shape is almost circular.

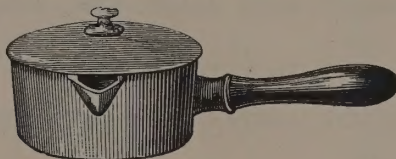
If the importance of its use is illustrated to patients, it will be found a great help in reducing the vast number of difficult and acutely sensitive cavities one so often has to treat.

It should be used with the aid of soap, and will cleanse the smallest shaped clasps, etc., without forcing them open.

It will also be found serviceable in the workroom.”

PRICE	per doz.	s. d.
9	0	
„	each	0 10

ACID BOILING PANS.



PORCELAIN.

Porcelain, 3½ in. diameter	each	s. d.
2	9	
Copper, round, 4 in. diam.	„	2 0
„ „ 3½ in. „	„	1 9

ACIDS FOR THE LABORATORY.

Muriatic or Hydrochloric.	per lb.	s. d.
0	6	
Nitric	„	1 0
Sulphuric	„	0 6
Bottles are charged extra	each	0 6

N.B.—We do not export these Acids.



TOOTH BRUSHES WITH BONE HANDLES.

(As shown on pages 65, 66.)

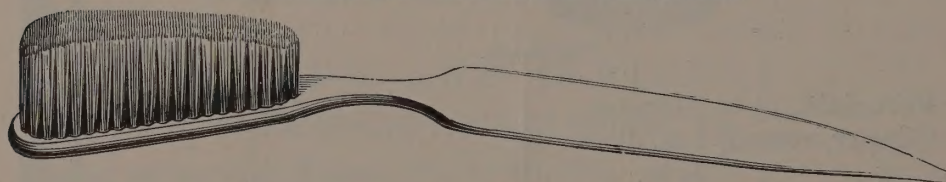
Made with **Hard, Medium, and Soft Bristles.**

FIRST QUALITY.

	per gross.	per doz.
	s. d.	s. d.
Adults' (Figs. 1 to 3 and 5)	90 0	8 0
" (Fig. 4)	96 0	8 6
Children's („ 4)	84 0	7 6
„ all forms except Fig. 4	57 0	5 3
Palate Brushes, round and square forms.	90 0	8 0
Any of the above with very hard bristles, extra	—	1 0
Double-ended Brushes in Composition Handles, one end for the teeth, the other for the plate	per doz.	11 0
Badger's-hair Brushes for solutions, Adults'	„	14 0
„ „ „ Children's	„	8 0
Black Tooth Brushes, best quality, for tinctures and solutions; length of brush-head, 1½ inches, form of Fig. 1	„	8 0
Tooth Brushes made to Dentists' own patterns by the gross.		
All forms of Tooth Brushes made or obtained to order.		
Steel Punches, with name, title, etc., made to order, 6d. per letter.		
Tooth Brushes stamped with name, etc., free of charge.		

DENTURE BRUSH.

FOR CLEANING ARTIFICIAL DENTURES.



The peculiar form of the brush, combined with the flat point at the end of the handle, is specially adapted for removing the unpleasant deposit so often found on artificial teeth. It is made with hard bristles.

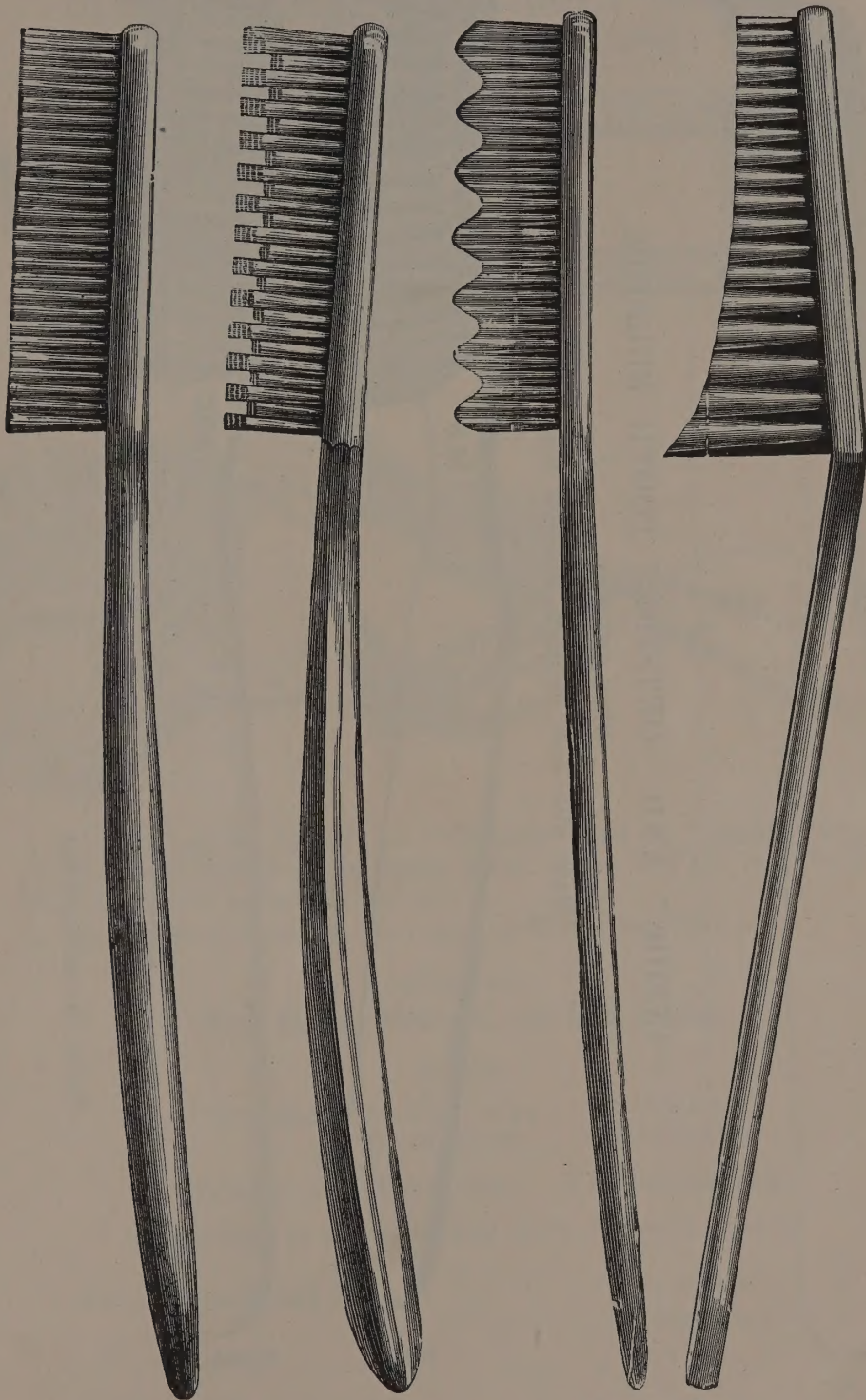
PRICE per doz. s. d.
9 0

DENTURE BRUSH (REGISTERED).

(MR. HENRY CARTER'S.)

PRICE, Double-ended each s. d.
1 0
 „ „ per doz. 9 0

FORMS OF TOOTH BRUSHES.

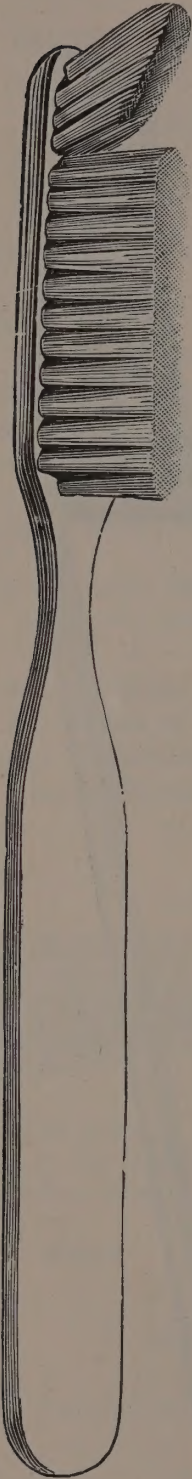


1.

2.

3.

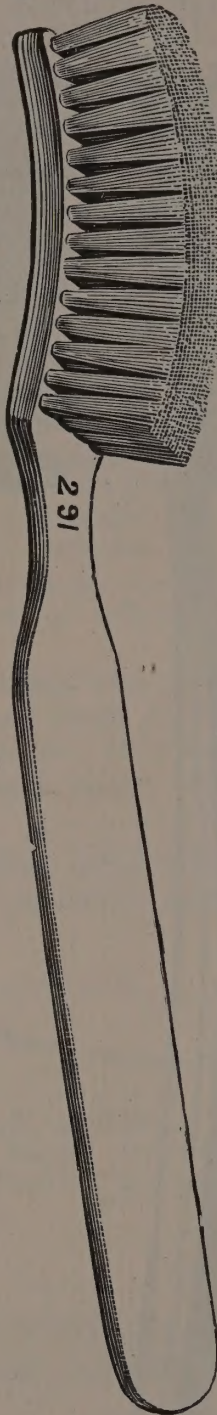
4.



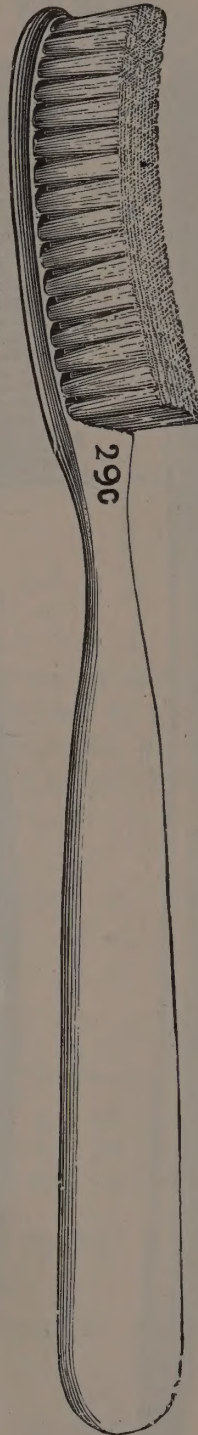
“INSIDE” AND “OUTSIDE” TOOTH BRUSHES.

BEST QUALITY.

Made with hard, medium, and soft bristles.



Inside.

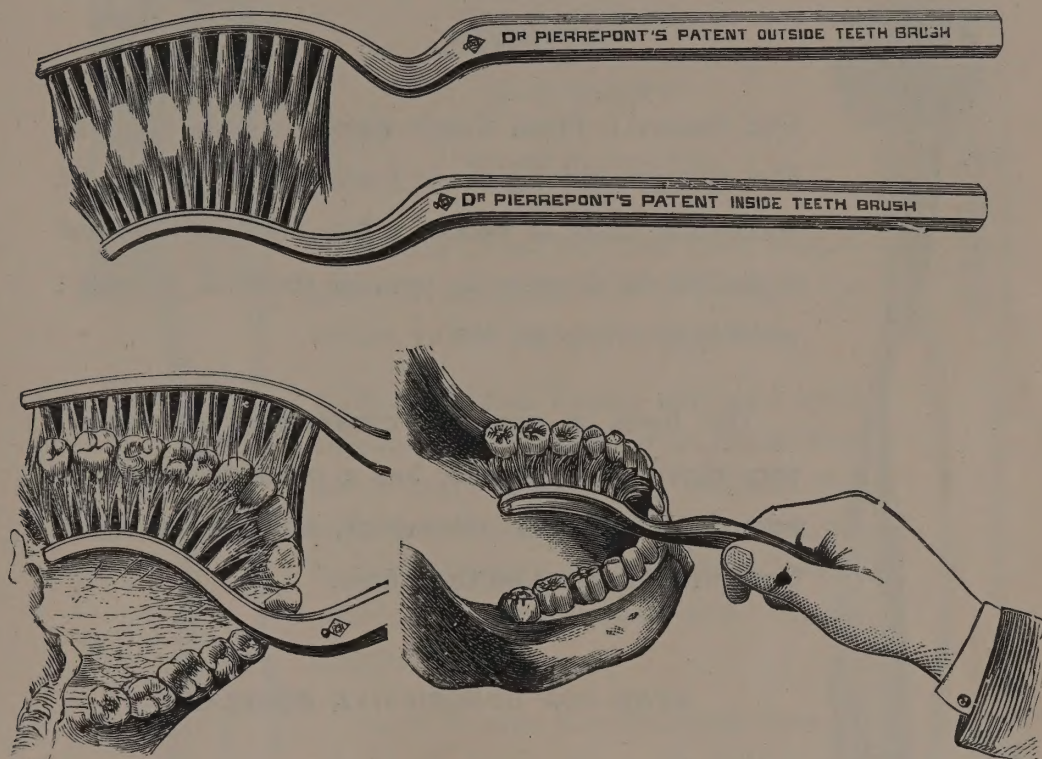


Outside.

	s.	d.
PRICE, in cardboard box	per pair	6 1
" " " " " "		9 0

OUTSIDE AND INSIDE TOOTH BRUSHES.

PIERREPONT'S THOROUGH-CLEANSING.



The illustrations show (1) an "Outside" and an "Inside" brush ; (2) the same applied on an upper dental arch ; and (3) an "Inside" brush applied on a lower dental arch.

The brushes are made in the following Grades and Sizes :—

GRADES:

With **Hard, Medium, and Soft** bristles.

SIZES:

"Outside"—A—FULL SIZE. C—SMALL.
B—MEDIUM. D—CHILD'S.

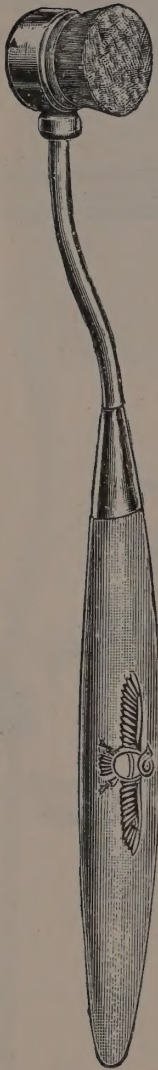
"Inside"—E—FULL SIZE. F—SMALLER SIZE.

In ordering, be careful to state grade and sizes required.

		s.	d.
PRICE, in cardboard boxes	per pair	1	9
" " "	per doz.	9	0
M		F	2

DR. HORSEY'S ORIENTAL FIBRE TOOTH BRUSH

(PATENTED).



THE ORIENTAL FIBRE TOOTH BRUSH is made from the fibre of a tree which grows in Arabia and the Soudan, and is known in Arabic as Al-Arak. This fibre has been used in the East for cleansing the teeth for thousands of years; probably as early as B.C. 3000.

The Brush is sanitary, convenient, absorbent, very thorough in action, has a pleasant aromatic odour, is naturally astringent, and has a most healthful influence on the gums.

SEND FOR DESCRIPTIVE BOOKLET.

		s.	d.
Handles, in bone or ebony . . .	per dozen	12	0
Brushes, one dozen in box . .	per doz. boxes	10	6
Handles, in 6-dozen lots . . .	per dozen	11	0
Brushes, in lots of 6-dozen boxes,	per doz. boxes	10	0

HOLDER,
WITH BRUSH.

SOLE AGENTS

*For the Dental Profession in all parts of the World except the United States
and Canada:*

CLAUDIUS ASH, SONS & CO., Limited.

To be obtained of all Dental Dealers.

HYGIENIC TOOTH BRUSHES.

DR. G. HAHN'S.

(Patented in Germany.)

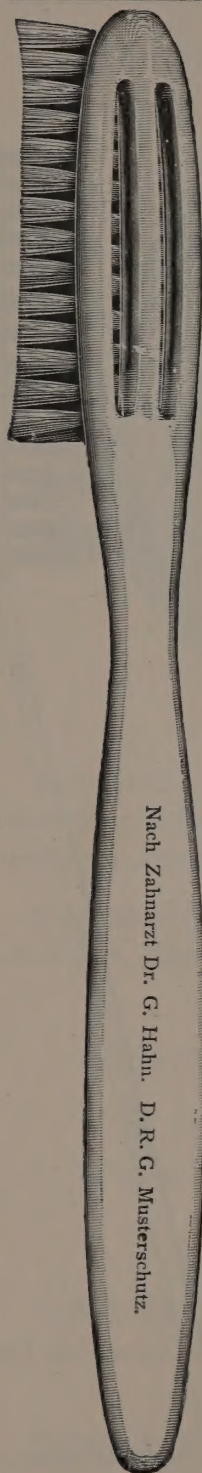
Dr. Hahn claims that these Tooth Brushes possess an advantage over all others in the market, in that they can be kept clean.

He holds that Brushes with solid heads are either very difficult to clean, or that they cannot really be thoroughly cleansed; that particles of food are forced between the bristles and remain there until they become putrid, and thus render such brushes dangerous to use.

In the Brushes here illustrated there are slits in the back—two in the Adults' size and one in the Children's size—by means of which the bristles can be thoroughly rinsed and kept sweet and clean; moreover, the air finds its way through all the tufts and helps to dry the bristles: this keeps the Brushes from becoming sodden, and prolongs their serviceableness.

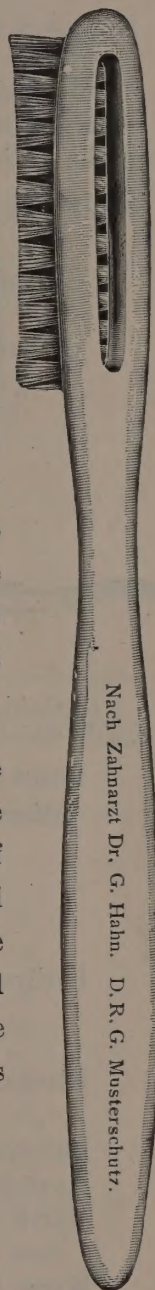
Adults' size, in celluloid	s.	d.
handles . . . per doz.	18	0

Children's size, in celluloid		
handles . . . per doz.	12	0



Nach Zahnarzt Dr. G. Hahn. D. R. G. Musterschutz.

ADULTS'.



Nach Zahnarzt Dr. G. Hahn. D. R. G. Musterschutz.

CHILDREN'S.

TOOTH BRUSH

WITH THREE ROWS OF BRISTLES.

Designed by Mr. JOHN WESSLER, Director of the Stockholm Dental Clinic.

Mr. Wessler claims that this brush can be used "with equal success on both the interior and exterior sides of the teeth."

Supplied with Hard, Medium, or Soft Bristles.

		s.	d.
Adults'	per doz.	10	0
"	per gross	114	0
Children's	per doz.	8	0
"	per gross	90	0

TOOTH PICK.

(MR. PALMER'S.)



Full size.

In Gold, set in Ivory, fitted in square ivory handle, inside which it slides.

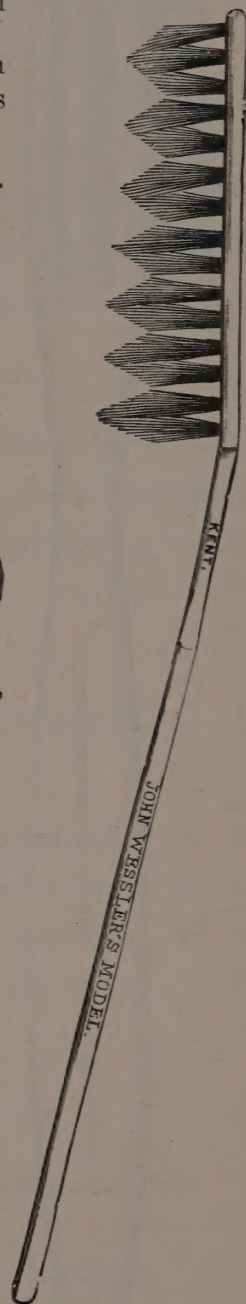
PRICE each 5s.

Other Tooth Picks supplied to order.

MOUTH WASHES.

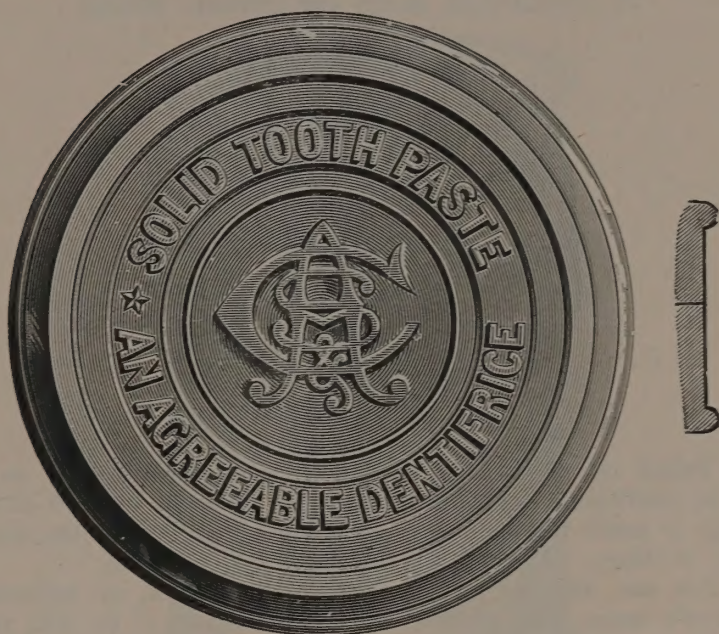
		s.	d.
Euthymol, in 4-oz. bottles .	per bot.	1	0
" 8-oz. "	"	1	10
" 16-oz. "	"	3	6
Klenso, in 4-oz. bottles .	"	1	6
" 8-oz. "	"	2	6
Listerine, in 14-oz. bottles .	"	4	0
Maglactis (Hydrate of Magnesia)	"	0	10
Myrrh (Fluid Extract), in			
8-oz. bottles	"	5	0
Myrrh Gum	per lb.	5	9

Other Mouth Washes supplied to order.



Adults' full size.

SOLID TOOTH PASTE.



This Tooth Paste is composed of the best and purest materials obtainable ; it is a most agreeable and refreshing dentifrice, and we can strongly recommend it as an elegant toilet requisite.

Supplied in Glass Boxes, also in Tin Boxes with glass lids, flavoured with **Rose, Cherry, or Peppermint.**

		s. d.
In Glass Boxes, any flavour	per box	0 10
„ „ „	„ doz.	9 0
„ „ „	„ gross	100 0
In Metal Boxes with Glass Lids, any flavour	„ box	0 9
„ „ „ „ „	„ doz.	8 0
„ „ „ „ „	„ gross	84 0

Solid Tooth Paste can be had stamped with the Dentist's own name and address on the following condition :—

Not less than one gross to be ordered at a time.

No charge is made for stamping beyond the first cost of the die, which is twenty shillings. The die will serve for a long time.

ASH'S TOOTH TABLET.

IN TURQUOISE BLUE CELLULOID BOXES.



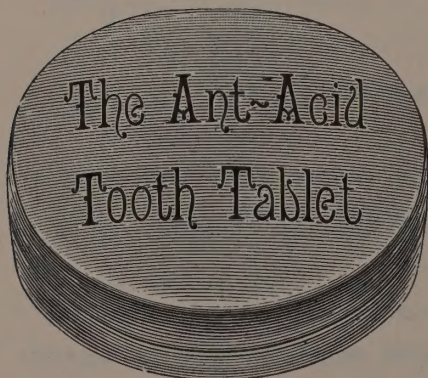
The Tablet can be had stamped with the Dentist's own name and address, on condition that not less than one gross be ordered at a time. No charge is made for stamping beyond the first cost of the die, which is twenty shillings. The die will serve for a long time.

The Box can also be had in White, Blue, Pink, or assorted, with the Dentist's name and address on lid, at a cost of 8s. 6d., provided not less than one gross be ordered. When five gross or more are ordered at a time no charge is made for the name plate.

Elegant and refreshing. Made in three flavours—Rose, Peppermint, and Aromatic.

		s.	d.
PRICE	per doz.	4	6
„	per gross	48	0

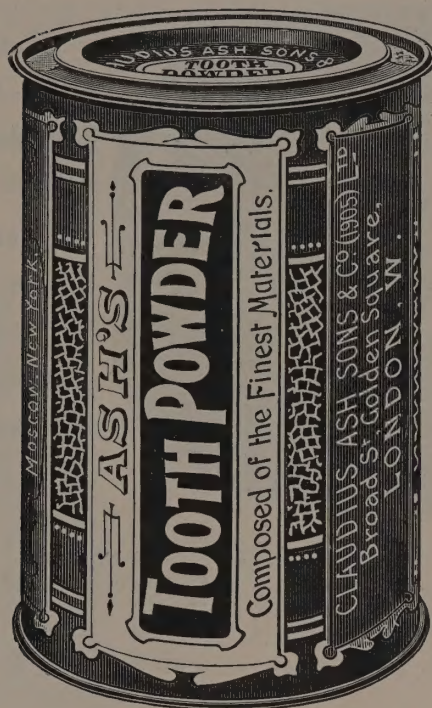
THE ANT-ACID TOOTH TABLET.



An agreeable and refreshing dentifrice. Put up in pink-coloured celluloid boxes.

		s.	d.
PRICE	per doz.	6	0
„	per gross	60	0

ASH'S TOOTH POWDERS.



These Powders are prepared with great care, the ingredients being thoroughly well ground and mixed. The materials of which they are composed are of the purest quality, and such as are generally recommended by the best authorities.

No. 1, Fine, Scented with Oil of Bergamot.

No. 2, Medium, Scented with Oil of Bergamot and Otto
of Roses.

No. 3, Coarse, Scented with Oil of Bergamot.

Supplied in 1-lb. tins	per lb.	s.	d.
		4	0

A discount of 10 per cent. allowed off 5 lbs.

Special terms for Tooth Powders in larger quantities than 5 lbs.

TOOTH POWDER BOXES.



Made of Tin, in two sizes — Small and Large. Each size is supplied in two colours—Silver and Bronze. They are far superior to wooden boxes, cleanly in use, unaffected by climatic conditions, and consequently do not swell or shrink during wet or dry weather.

	Silver Colour.		Bronze.	
	Per gross. s. d.	Per doz. s. d.	Per gross. s. d.	Per doz. s. d.
Small, labelled Tooth Powder . . .	15 0	1 6	18 0	1 9
Large, „ „ . . .	18 0	1 9	21 0	2 0

*Small, without Labels	12 0	1 3	15 0	1 6
*Large, „ „	15 0	1 6	18 0	1 9

The small boxes hold 1 oz. and the large $1\frac{1}{2}$ ozs. of Tooth Powder. Either size, in any of the above styles, can be had filled with Ash's Tooth Powder, No. 1, No. 2, or No. 3—see previous page—at the following prices:—

	Per gross.		Per doz.	
	s.	d.	s.	d.
Small, at an extra charge for the Powder of	32	0	3	0
Large, „ „ „ „	48	0	4	6

* These unlabelled boxes are supplied by the gross with the Dentist's own labels on them, provided not less than five gross (720) of labels are ordered at a time.

If fewer than five gross of boxes are ordered at the same time as the labels, the labels which are over will be held at the disposal of the owner for future use. The cost of such special labels increases the price of each kind and size of box by 8/0 per gross.

ANTISEPTIC ROSE TOOTH POWDER.

IN DECORATED TINS WITH SPRINKLER TOPS.

The Powder is composed of the purest materials, and we guarantee it to be absolutely free from deleterious ingredients.

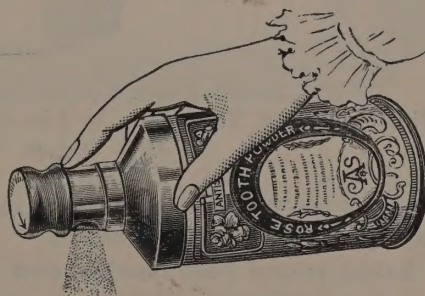
No extra charge is made for printing the Dentist's name on the label in place of our monogram, on condition that not less than one gross tins of Powder are ordered at a time.

DIRECTIONS:

To open, pull the top upwards and the outlet will be found under the arrow ↓.

To close, push the top downwards.

Shake Powder out into the palm of the hand, thus—



		s.	d.
PRICE	per doz.	10	0
"	per gross	114	0

AMERICAN TOOTH POWDERS AND SOAPS.

(THE S. S. WHITE D. M. CO.'S.)

		s.	d.
No. 1 Powder, Rose flavour, in 1-lb. tins	per tin	6	3
" 1 " " " 4-lb. "	"	21	0
" 1 " Wintergreen flavour (to order), same prices as Rose.			

A discount of 15 per cent. is allowed off 5 one-lb. Tins.

No. 2 Powder, in 1-lb. tins	per tin	4	2
" 2 " 4-lb. "	"	14	6

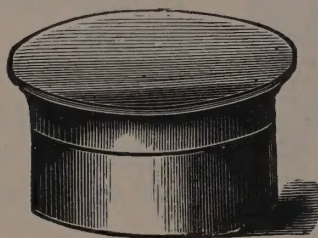
A discount of 10 per cent. is allowed off 10 one-lb. Tins.

Mint Flavour Tooth Soap, in cardboard boxes	per doz.	8	4
Wintergreen " " "	"	8	4
Rose " " "	"	10	5

Cuttle-Fish Powder	per lb.	2	0
Orris Root	"	2	0
Precipitated Chalk	per 7 lbs.	2	0
Prepared " "	per lb.	0	3

WOODEN TOOTH POWDER BOXES.

(VARNISHED.)



	Per gross.	s.	d.
With Projecting Tops, $2\frac{1}{2}$ in. by $\frac{3}{4}$ in. deep inside, size No. 1		25	0
" " " $2\frac{1}{4}$ in. by $\frac{3}{4}$ in. " " " 2		20	0
" " " 2 in. by $\frac{3}{4}$ in. " " " 3		16	0

Plates for Teeth Powder Box Labels made and engraved any style, price varying according to the design.

Labels printed from Dentists' own Plates.

Labels with name, address, etc., printed from ordinary type to order.

	s.	d.
Labels with the words "Tooth Powder" only	per 100 from	1 6
Charge for labelling Tooth Powder Boxes	per gross	1 0

Tooth Powder Boxes made to Dentists' own patterns by the gross.

ASH'S EMPRESS TOOTH PASTE.

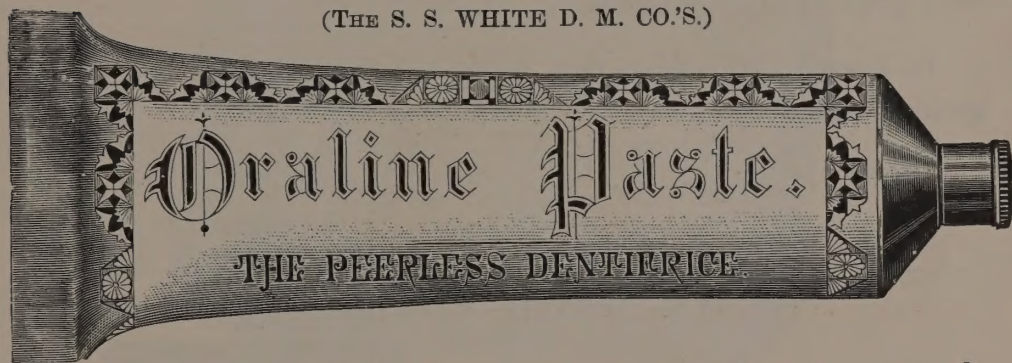


In china pots with gold-blocked white lids.

		s.	d.
PRICE	per doz.	10	0
„	per gross	114	0

ORALINE PASTE.

(THE S. S. WHITE D. M. CO.'S.)



		s.	d.		s.	d.
In collapsible tubes	per tube	1	0	per doz.	10	6
In jars of 2½ ozs.	per jar	1	6	„	16	8
„ 1½ „	„	1	0	„	10	6
Euthymol Tooth Paste (Parke, Davis & Co.'s), in collapsible tubes per doz.						
					9	6
Euthymol Cream. —An antiseptic emollient for keeping the Surgeon's hands soft and in good condition per doz.						
					9	6

ASH'S SALOL DENTIFRICE.



Salol Dentifrice is a scientific preparation, with powerful antiseptic properties. It is composed of the purest materials, and is corrective and preventive in action. Compared with similar preparations in the market it is equal to the best in quality—in every way as efficient and agreeable—and much cheaper in price, not only as regards the amount charged for it, but in the quantity contained in the bottle.

It is economical in use, since, owing to its strength, a few drops in a tumbler half full of water are sufficient to make a most agreeable mouth-wash, which has an astringent effect upon the gums, and leaves a delightful sense of freshness in the mouth.

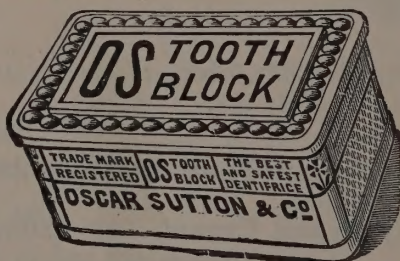
For cleaning the teeth, and preventing the formation of tartar or stains, the tooth brush should be dipped in water, and a few drops of Salol sprinkled on the wet brush.

In elegant opal bottles, each bottle containing about 2 ozs., with sprinkler tops.

		s.	d.
PRICE	per doz.	12	0
„	per bottle	1	2

O.S. TOOTH BLOCKS.

		s.	d.
In glass boxes . . .	each	2	6
„ „ . . .	per doz.	27	0
In metal „ . . .	each	1	0
„ „ . . .	per doz.	11	0



ASH'S ANTI-GERM DENTIFRICE.

This Dentifrice is not a preparation merely possessing an agreeable aroma and a pleasant flavour, but is also a true antiseptic, composed of the best prophylactic and remedial agents known. Exerting a direct influence upon the oral secretions, it renders the mouth as far as possible proof against the encroachment of caries ; and its astringent properties, at the same time, give a healthy tone to the oral membranes.

Put up in clear glass bottles, each containing about $2\frac{1}{2}$ ozs.

		s.	d.
PRICE	per doz.	18	0
„	„ bot.	1	8



ASH'S ANTISEPTIC TOILET SOAP. FOR DENTISTS' USE.



Full size.

This Soap represents the highest standard of quality in the manufacture of Toilet Soaps. It is made from edible fat, charged with a useful percentage of Formaline, and is just sufficiently perfumed to render it agreeable without being objectionable ; in a word, it leaves the hands practically non-odorous after use. We have every confidence in recommending it as an elegant preparation which preserves the skin and keeps the hands nice and soft.

	s.	d.
Per dozen Tablets	4	6
„ Tablet	0	5

FAULDING'S SOLYPTOL

(SOLUBLE EUCALYPTUS OIL).

THE MODERN ANTISEPTIC.

NON-POISONOUS, INSTANTANEOUS, AND FRAGRANT IN USE.

"As a General Disinfectant and Deodorant Solyptol has no equal."—*See* Dr. A. B. Griffith's Bacteriological Report, which is supplied with each bottle.

It is largely employed by the Dental Profession for disinfecting and cleansing Spittoons, etc.



	s.	d.
In 6-fluid-oz. bottles	per doz.	10 0
"	per bottle	1 0

FAULDING'S SOLYPTOL SOAP

Contains Solyptol (Faulding's Soluble Eucalyptus Oil) and Olive Oil combined with Antiseptics of known Germicidal strength.

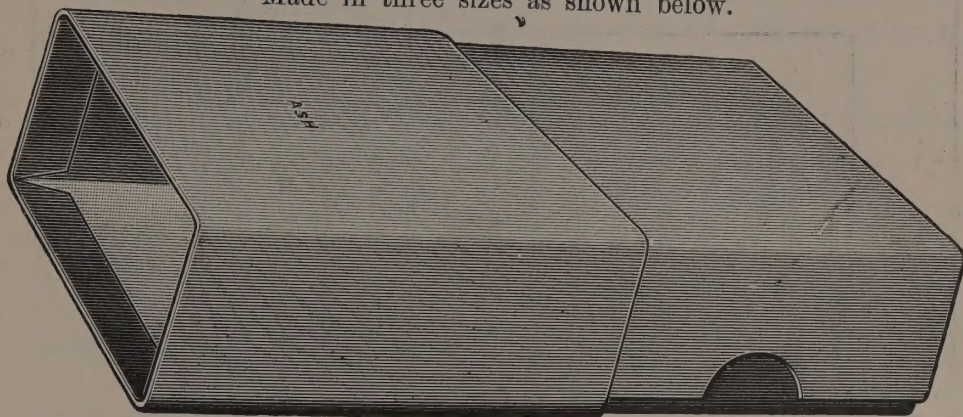


It is a Delicately Perfumed Soap, absolutely non-irritating in use, and was prepared originally at the request of the Medical Profession. As a Toilet Soap for the skin, complexion, and shaving, it has no rival.

	s.	d.
In tablets	per doz.	10 0
"	per tablet	1 0

DENTURE BOX WITH SLIDE.

Covered with Morocco Paper, lined with Red Paper.
Made in three sizes as shown below.



Box with sliding cover, and outlines of sizes of the boxes.

L.

M.

S.

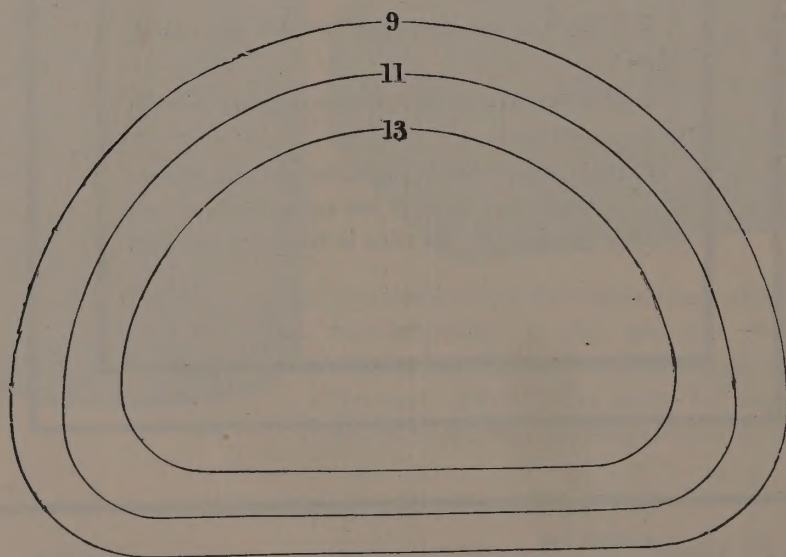
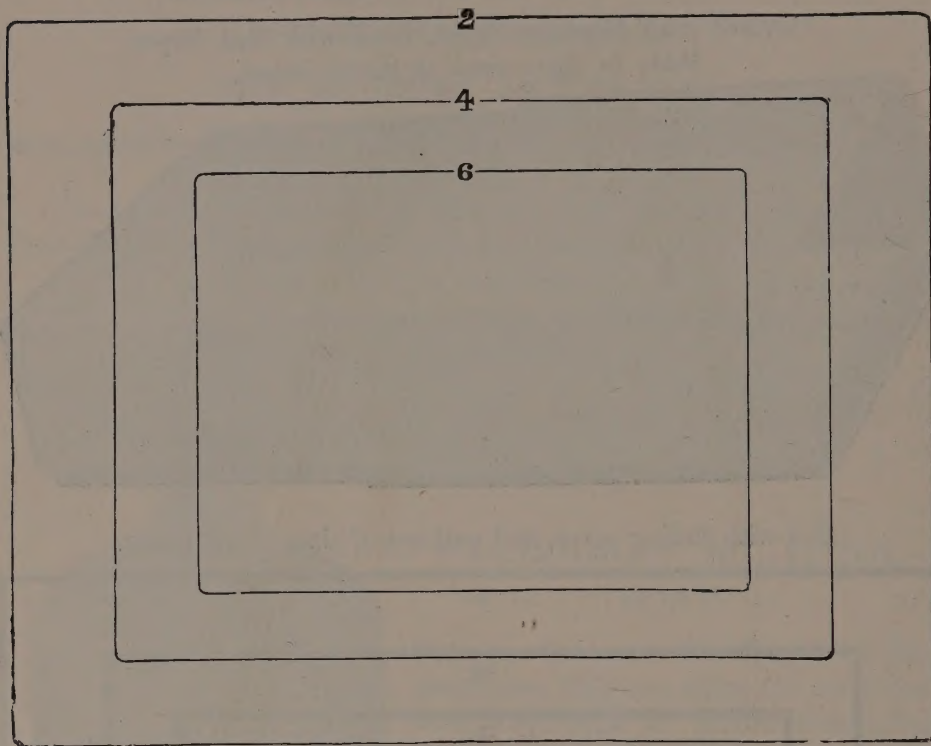
This style of box possesses two distinct advantages:

1. It is very strong, and will carry safely through the post.
2. It is attractive in appearance, and always looks new, after it has passed through the post, when the slide is drawn off the box.

	per doz.	s.	d.
Small, for pieces	2	0	
Medium, for half sets	2	0	
Large, for full sets	3	0	

Ten per cent. discount allowed off one gross or more.

SIZES OF CASES.



LEATHER CASES.

The sizes on the opposite page represent the **outside** dimensions of each case. The **inside** measurements are, roughly speaking, about an eighth of an inch less each way.

Names, addresses, etc., printed inside the lids of the **first quality** to order, at the expense of the buyer, when purchased by the dozen.

SQUARE.

	Sizes	2.		4.		6.	
		s.	d.	s.	d.	s.	d.
First Quality, with Lock and Key. . . each		5	0	3	3	—	
„ „ with Spring . . . „		2	3	1	9	1	3
Second „ „ „ . . . „		1	10	1	6	1	1

HALF-OVAL,

FOR LOWER PIECES.

	Sizes	9.		11.		13.	
		s.	d.	s.	d.	s.	d.
First Quality, with Spring each		1	6	1	4	1	1
Second „ „ „ „		1	2	1	1	1	0

Other sizes supplied to order.

A discount of 10 per cent. is allowed when Leather Cases are purchased by the dozen.

SHOULDERED WOOD BOXES.

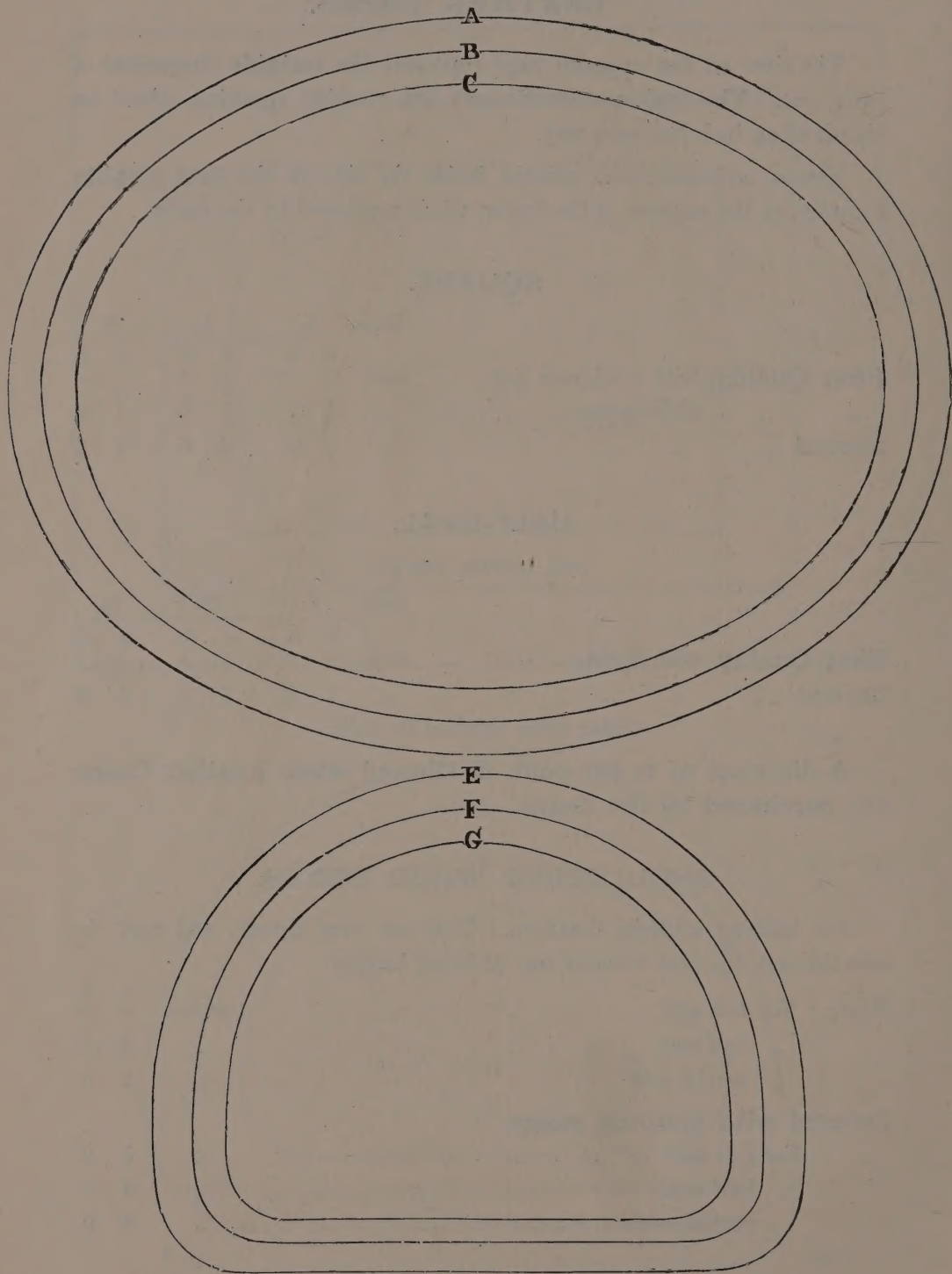
For holding artificial dentures. They are very strong, and may be sent through the post without fear of being broken.

		s.	d.
Plain : For full sets	per doz.	4	0
„ half sets	„	3	0
„ partial sets	„	2	0
Covered with morocco paper :			
For full sets	„	5	0
„ half sets	„	4	0
„ partial sets	„	3	0

SIZES OF CASES.

A
B
C

E
F
G



LEATHER CASES.

The sizes on the opposite page represent the **outside** dimensions of each case. The **inside** measurements are, roughly speaking, about an eighth of an inch less each way.

Names, addresses, etc., printed inside the lids of **first quality** cases to order, at the expense of the buyer, when purchased by the dozen.

OVAL.

	Sizes	A.		B.		C.	
		s.	d.	s.	d.	s.	d.
First quality, with Spring	each	2	6	2	0	2	0
Second „ „ „	„	2	0	1	9	1	7

HALF-OVAL.

	Sizes	E.		F.		G.	
		s.	d.	s.	d.	s.	d.
First quality, with Spring	each	1	9	1	7	1	3
Second „ „ „	„	1	3	1	1	1	0

Other sizes supplied to order.

A discount of 10 per cent. is allowed when Leather Cases are purchased by the dozen.

CARD BOXES,

FOR HOLDING ARTIFICIAL DENTURES, ETC.

	Sizes as on page 82.	Nos. 2.		4.		6.	
		s.	d.	s.	d.	s.	d.
Drab, with red edges	per doz.	5	0	3	0	2	0

TOUGH BOXES FOR POST PARCELS, ETC.,

STRENGTHENED WITH METAL AT THE CORNERS.

		s.	d.
For sets	per doz.	1	6
„ half-sets	„	1	3
„ pieces	„	0	10

Less 10 per cent. by the gross. These boxes are light, very strong, and extensively used.

Cases or Boxes in Card, Wood, Leather, Britannia Metal, or Japanned Tin made to order or special directions.

ELECTROTYPES,

FOR APPOINTMENT BOOKS, RECORD FORMS, ETC.

FIG. 3.

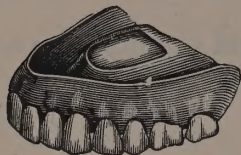


FIG. 4.



FIG. 7.

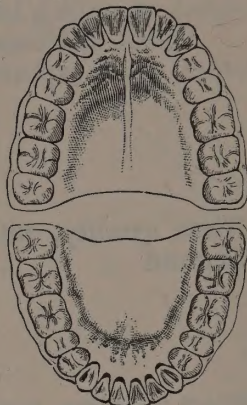


FIG. 5.

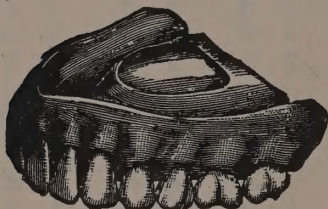


FIG. 6.

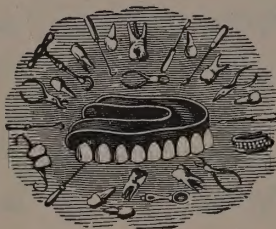


FIG. 8.

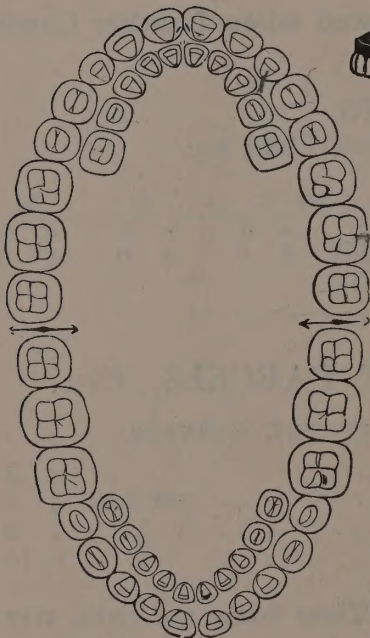


FIG. 1.



FIG. 9.

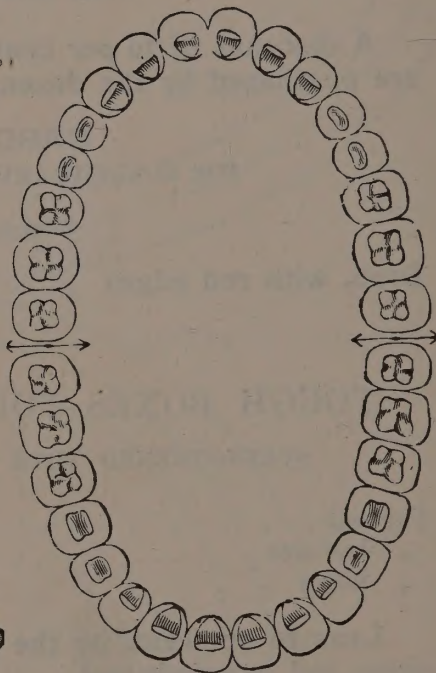


FIG. 2.



PRICES:

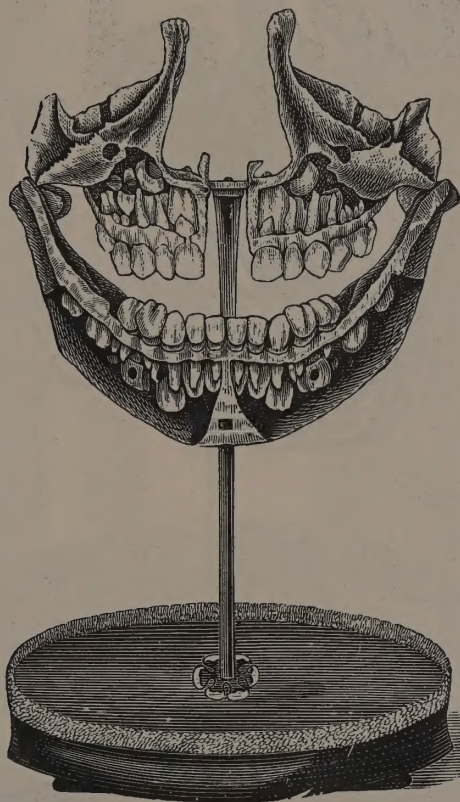
	Fig. 1.	2.	3.	4.	5.	6.	7.	8.	9.
Each . .	9d.	9d.	1s.	1s.	1s. 6d.	1s. 6d.	3s.	3s.	3s.

ANATOMICAL PREPARATIONS.

FIRST AND SECOND DENTITION.

These preparations are not only instructive to the Dental Student, but useful to the Dentist for explaining to Patients the causes of irregularities in the teeth of children, and for showing why some Teeth have a greater tendency to irregularity than others.

FIG. 1.



This is supplied in two kinds ; one showing the dentition of children between the ages of six and seven years, the other between the ages of seven and eight years. The bones and teeth are perfectly bleached, and mounted on pillar and stand covered with a glass shade.

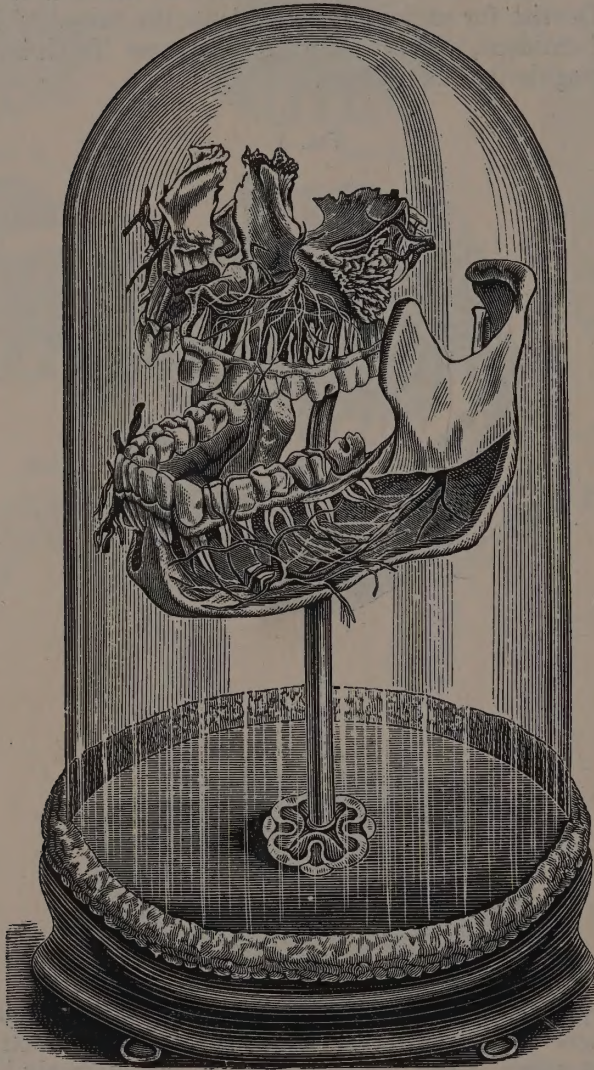
PRICE	(Fig. 1)	s.	d.
		56	0

Children's Skulls, showing First and Second Dentition, mounted or unmounted, supplied to order.

ANATOMICAL PREPARATIONS—*continued.*

SECOND DENTITION.

FIG. 2.



The Second Dentition is useful to the Dentist for describing to Patients the ramifications of the nerves of the face and jaws, and thus accounting for the pain which is often felt at a considerable distance from the tooth which is the cause of it.

SECOND DENTITION—*continued.*

Fig. 2 shows the Nerves, Arteries, and Veins in the upper and lower jaws, portions of which and of the teeth are cut away for the purpose. The nerves are exhibited on one side, and the arteries and veins on the other.

The bones and teeth are perfectly bleached, and are mounted on pillar and stand covered with glass shade, as shown in the illustration.

	s.	d.
PRICE (Fig. 2)	60	0
Skulls, Articulated, for Students	To order.	
„ Disarticulated, „	„	

Other kinds of Anatomical Preparations supplied to order.

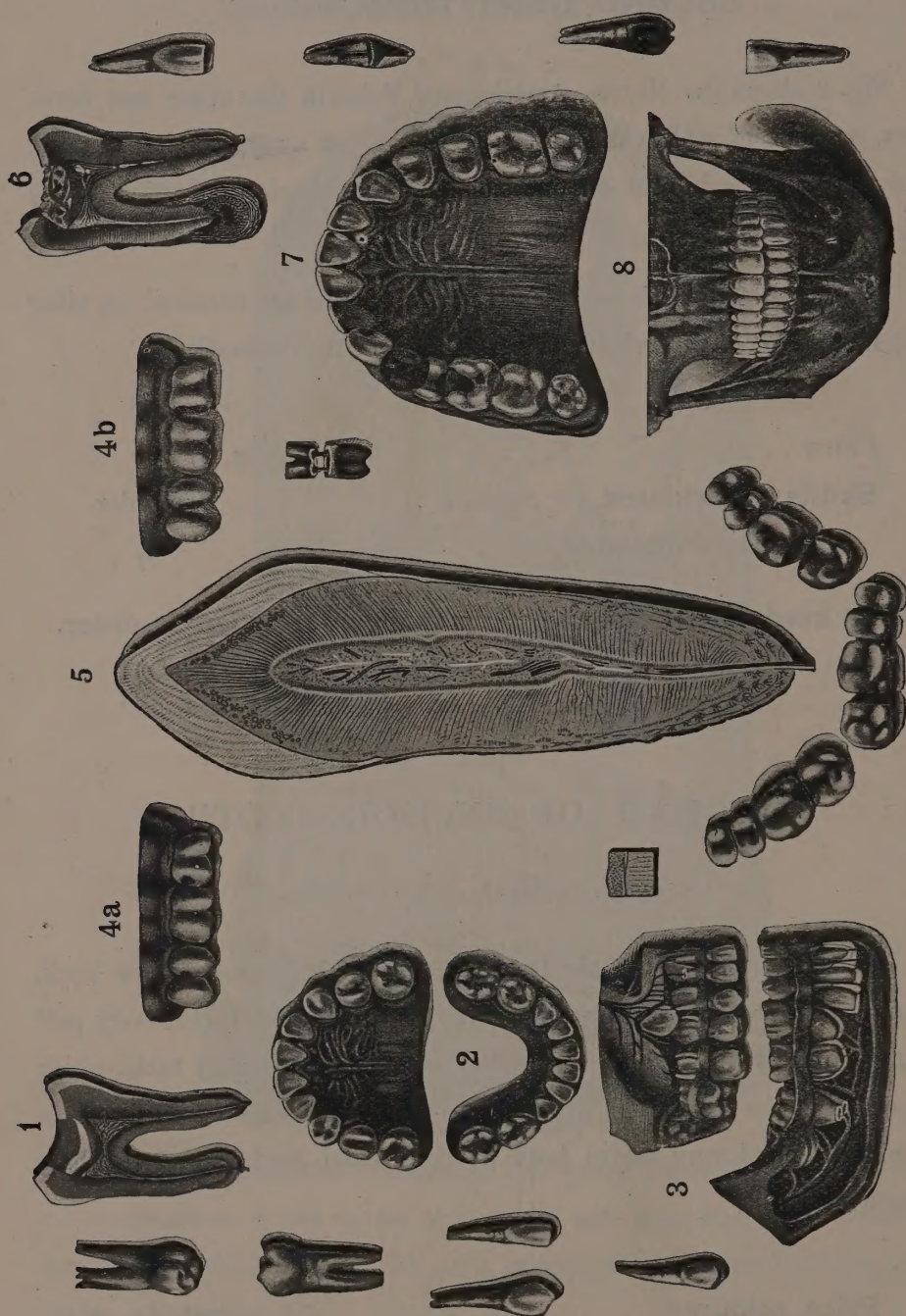
DIAGRAM OF INCISOR TOOTH.

Size, 13 inches long by $9\frac{1}{2}$ wide.

Published by request of the Dental Society of the State of New York. Designed to show the complete structure of the human tooth, every part being carefully marked to correspond with an explanatory table, which is printed at the foot of the illustration. As a ready means of reference it will be found very useful both by the Dental Student and the busy Practitioner.

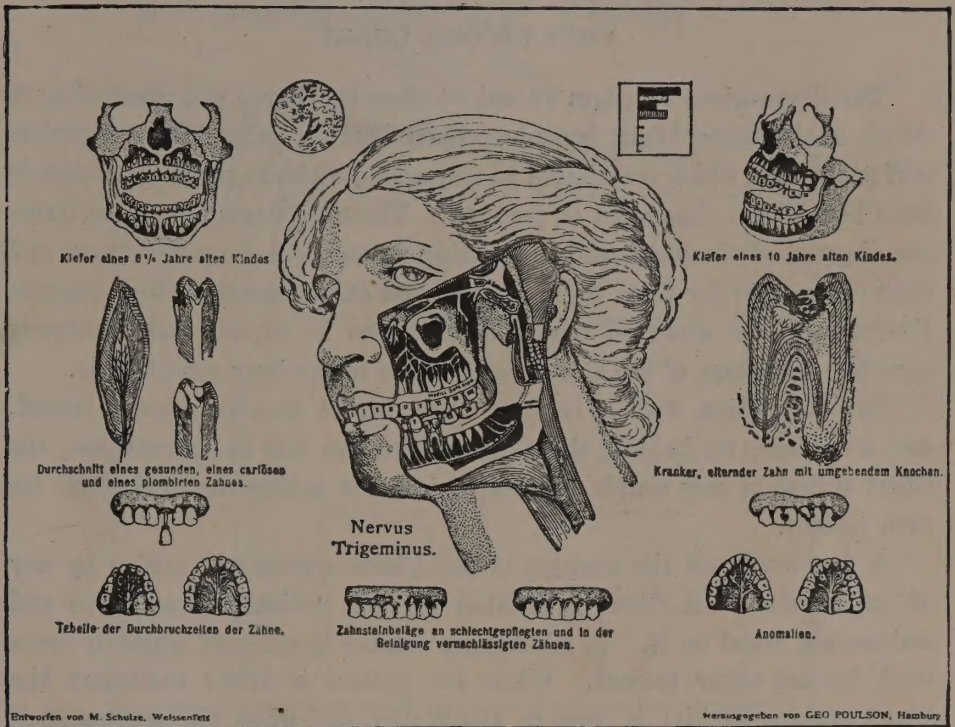
	s.	d.
Price, coloured	net 4	0

WELLAUER'S CHART OF THE TEETH OF MAN.



All the figures not numbered are described on the Chart.

CHART OF THE FIFTH PAIR OF NERVES, Etc.



This chart, of which the above is a reduced illustration, excels in accuracy anything in the same line which has hitherto appeared. The importance of the anatomical and pathological relationship of the mouth, the maxillæ, and the teeth is here shown in a highly instructive manner.

A graphic picture is given of—

- Bacteria in process of development ;
- Salivary deposits ;
- Effects of green tartar upon the gingival margin ;
- Relationship of the tooth tissues to each other ;
- Development of the teeth ;
- Destructiveness of Caries ;
- Pulpitis and Periostitis ;
- Time of the Eruption of the teeth, etc., etc.

It is tastefully executed, presents no repugnant features, and is beautifully lithographed.

Size, 33½ inches by 25½ inches.

With English, French, or German Text.

		s.	d.
PRICE	net	4	6
„ mounted on linen	„	5	6

A NEED OF MODERN PRACTICE.

ASH'S RECORD CHART.

The illustrations on pages 93 and 94 show the Large and Small sizes in which Ash's Record Chart is made. Each Chart is printed on a superfine stiff white card, which is eyeletted to correspond with the three wire loops in the Chart Wallet illustrated on page 95. There are ten simple signs inside the diagram of the teeth, and the writing space is ruled on the front and back of the card for Date, Sign, Explanation and Amount of Fee charged. Everything is so arranged that operations can be rapidly and accurately recorded—a matter of the utmost importance to the busy practitioner.

In conjunction with a Ledger, which serves as a permanent record, and a Cabinet, for holding the Charts which are not in current use, the Chart system is very simple and convenient for noting the work done for each patient.

A few words on the working of the Chart system will suffice by way of explanation. A Chart is allotted to each patient, whose name and address are noted on it. In addition, a number is attached which is never used for any other patient. While the patient is under treatment the Chart relating to him is kept in the Wallet, and when the treatment is completed the details are entered in the Ledger, the Chart is ruled off and put in its alphabetical division in the Chart Cabinet until it is wanted again. Should a question arise as to fee, etc., the Chart can at any time be referred to and replaced in the Cabinet; the Operator is never obliged to show his Ledger, hence he can always keep the details relating to other patients quite private, and secure himself against the prying eyes of the over-curious.

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The large size Chart and Wallet are intended for use in the operating room; the small size—not too large for the pocket—for use when visiting, or going to a Branch Practice.

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ASH'S RECORD CHART.

LARGE SIZE.

<i>M</i> 190	Date	Sign.	<i>Carried forward</i> <i>L</i>	<i>L</i>	<i>S.</i>	<i>D.</i>

EXTRACTION E
 SEPARATION S
 FILLING F
 TOOTH MISSING M
 TOOTH ON PLATE P
 PIVOT P
 NERVE REMOVED N
 NERVE CAVITY AND CROWN }
 FILLED C
 SUPER. DECAY REMOVED D
 SCALING X

ASH'S RECORD CHART.

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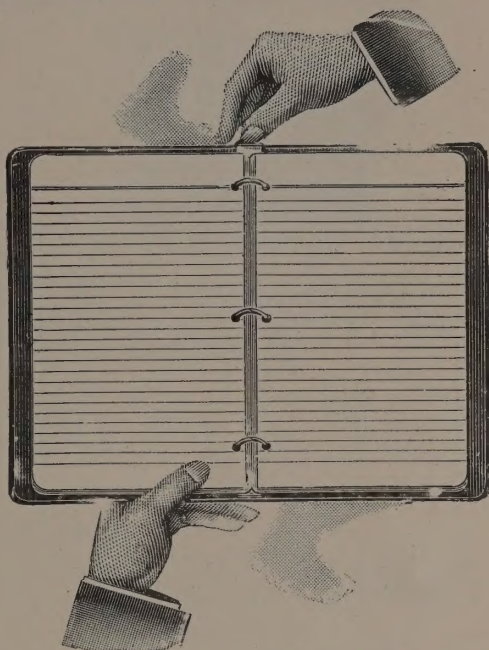
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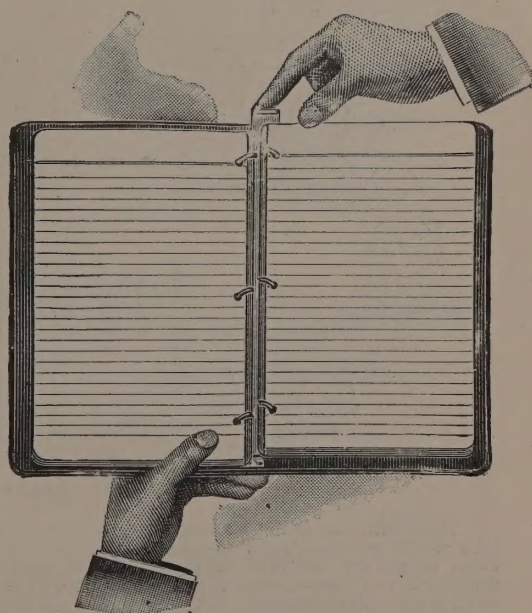
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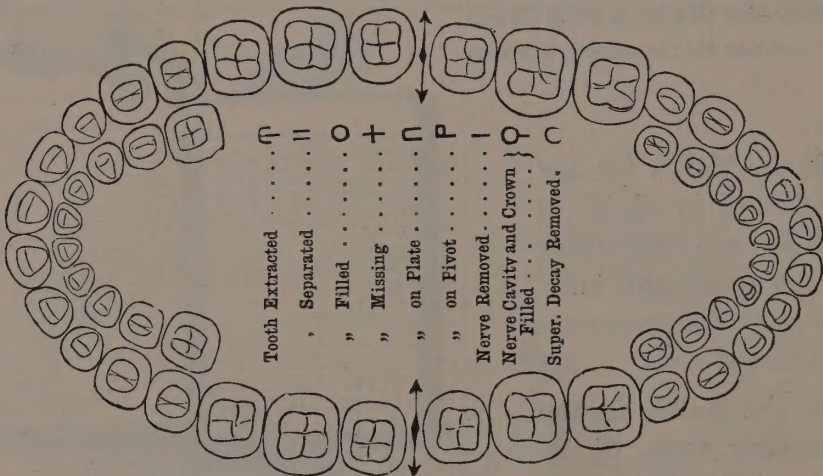


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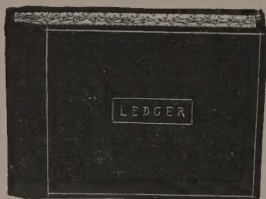
ASH'S RECORD FORMS.



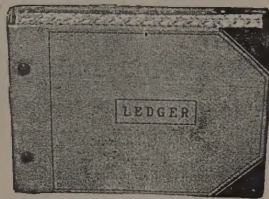
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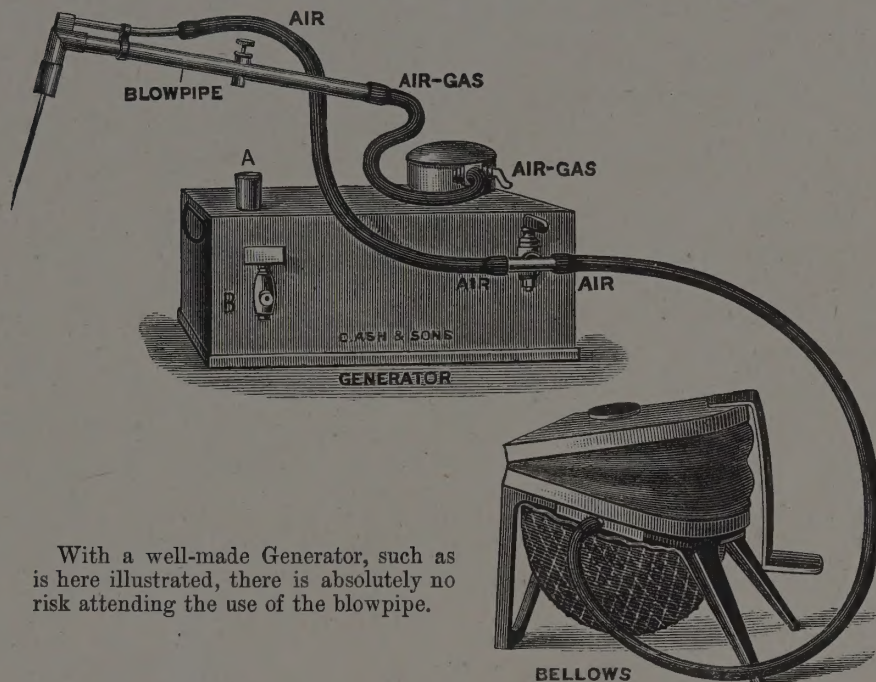
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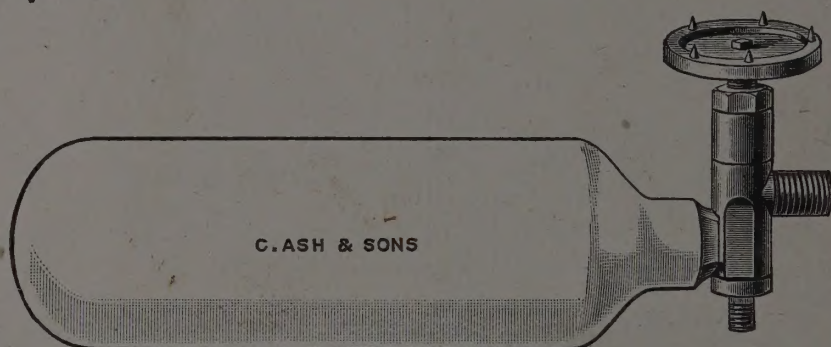
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